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## TABLE OF CONTENTS

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### ORIGINAL ARTICLES

THE CALORIE AS A UNIT IN FIGURING MILK MODIFICATIONS. By Tracy Jackson Putnam, A.B., Boston. ....	107
AN EXPERIENCE WITH THE SCHICK TEST AND TOXIN-ANTITOXIN AND A PLEA FOR THEIR USE IN THE EXTINCTION OF DYPHTHERIA. By Thomas E. Lilly, M.D., Shirley, Mass. ....	110
PSYCHOSES ACCOMPANYING INFLUENZA: CLINICAL FEATURES AND PROGNOSIS. By Elybert W. Fell, M.D., Cincinnati, Ohio. ....	113
THE TREATMENT OF GONORRHEA IN THE MALE. By Arthur H. Crosbie, M.D., Boston. ....	116
TISSUE INJURY AN IMPORTANT FACTOR IN THE DEVELOPMENT OF TUBERCULOSIS. By Herbert F. Gammons, M.D., Dallas, Texas. ....	119

### EDITORIALS

MATERNITY BENEFITS. ....	121
THE ARMY MEDICAL SERVICE. ....	124
IMPORTANT FACTS ABOUT CANCER. ....	125
THE PHYSIQUE OF HARVARD FRESHMEN. ....	126
MEDICAL NOTES. ....	127

### THE MASSACHUSETTS MEDICAL SOCIETY

MEETING OF JOINT COMMITTEE ON LEGISLATION OF THE MASSACHUSETTS MEDICAL SOCIETY AND THE MASSACHUSETTS HOMEOPATHIC MEDICAL SOCIETY, DECEMBER 30, 1919. ....	132
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### CORRESPONDENCE

SIZE AND MANAGEMENT OF STATE HOSPITALS. Robert Lewis Richards. ....	133
POISONOUS GASES IN WARFARE. Charles S. Butler, M.D. ....	133
"PALMAM QUI MERUIT FERAT." Elbridge G. Cutler, M.D. ....	134

### MISCELLANY

EMMA B. CULBERTSON, A.M., M.D. ....	132
NOTICES, RECENT DEATHS, ETC. ....	134

## Original Articles.

### THE CALORIE AS A UNIT IN FIGURING MILK MODIFICATIONS.

By TRACY JACKSON PUTNAM, A.B., BOSTON.

It is often of interest, though less often of practical use, to consider new ways of attacking old problems, even when the established methods are satisfactory. Many different procedures for calculating and modifying infants' diets are in use, each of which doubtless has something to recommend it, and many more have been suggested and discarded. The plan of feeding which I am about to outline will probably never be put into practical use, and yet it may serve some purpose in calling attention to certain aspects of infant feeding of which little notice so far has been taken.

The use of the calorie in infant feeding is, of course, by no means a new idea. But the so-called "caloric" method of feeding, as usually practiced, takes account of the total fuel value of the mixture only, without inquiring very deeply into the relative proportions of the various food elements which it contains; and it has been shown repeatedly how important

variations in the percentage composition of mixtures may be. Moreover, the total fuel value of a mixture gives us very little idea of its suitability for a given sick baby, and guided by the total caloric value alone, it is often difficult to adjust the food exactly to fit the needs of the case. The "percentage" method, probably the most satisfactory now in use, does permit a close adjustment to the needs of the individual baby; but some practitioners find it rather difficult to manage the calculations required, and to get from them a concrete idea of the amount of food that is being given.

Neither of these methods at all resembles that used in the calculation of diets for adults. In figuring the amount and kind of food to be allowed to a typhoid fever patient, a nephritic, or a diabetic, we deal in terms of the weight and caloric value of the separate food elements, instead of in terms of percentage and quantity, or of total caloric value alone. It is my purpose to show that a variation of this method is as rational and simple as the methods in use for feeding infants, and to indicate how it might easily be extended to milk modifications.

As none of the ingredients of infants' foods, as usually prepared, are weighed, it will probably be simpler to deal with them chiefly in

terms of calories. The use of the calorie instead of the gram or ounce in calculation would have the further advantage that the food elements would all be reduced to a common unit, namely, the fundamental one of heat value; while at the same time the proportionate composition would be considered.

Such a method of calculation would tend, I believe, to clarify our methods of thinking on the subject of infant feeding, in that it would focus our attention upon what are, after all, the essential points in any diet: the nutrient value of the daily allowance, and also its distribution among the various food elements. If, using the "percentage" method, we say that a certain baby is to have thirty-two ounces of a 3% fat, 6% sugar, 2% protein mixture, we have to multiply each of these percentages by 32 and divide by 100 to get any concrete picture of what the food contains. But even the weights of the various elements are not an expression of the energy which the infant will receive from the food; to determine this, we must multiply our weights by their respective calorie coefficients. There are short cuts, of course, for each of these manoeuvres, but they introduce inaccuracies and tend to obscure the meaning of the procedures. Needless to say, the practitioner seldom takes these steps; he has trained himself to feel, often perhaps rather empirically, that about such and such a modification is suitable for an infant of about such an age and weight, and that if symptoms of indigestion occur, such an element should be cut down by about so much. If, however, the various constituents of the diet had been calculated in calories in the first place, it would probably be easier for him to apply his knowledge of nutritional physiology to the calculation or correction of the diet.

Moreover, the calculation of the food content of a mixture alone, separate from the fluid volume in which it is given, would enable us more easily to investigate the importance of variations in the latter; a subject which receives scant attention in most textbooks. The indications for increasing the percentage of protein, or decreasing that of fat, are thoroughly discussed by many authors, but when to give a thirty-two ounce mixture of 1% fat, 4% sugar, and 2% protein, instead of twenty ounces of 1.5% fat, 6% sugar, and 3% protein is seldom mentioned. A considerable field for research would be opened, and its results easily applied.

The calculation and alteration of prescriptions would, in addition, be somewhat simplified by the fact that we should use but one unit for both solids and liquids. Thus, it would not be necessary to remember that a tablespoonful of milk sugar weighs about half an ounce, and will add a certain percentage to each different volume of mixture, but merely that it contains fifty-seven calories, to be added to our total whatever it may be.

A further advantage would be that we should be able to continue the calculation of the diet throughout infancy and into childhood, whenever desirable, with little extra trouble. Such foods as bread, the cereals, and simple meats could be introduced into the diet list in measured quantities, and the proportions of the various food elements manipulated with much greater ease and certainty than is now possible.

For ordinary clinical purposes, it is probably accurate enough to use calorie values corresponding to the percentages now in general use in home modifications; that is, to assume that skim milk contains no fat, while gravity cream contains sixteen per cent., and so on. The constituent calorie values of the ingredients most commonly used in milk mixtures are given in Tables I and II.

TABLE I.\* CONSTITUENT CALORIC VALUES OF VARIOUS MATERIALS.

	FAT cal.	CARBO- HYDRATE cal.	PRO- TEIN cal.	TOTAL cal.
1 oz. of, contains				
Human milk .....	11.0	7.9	1.8	20.7
Whole cow's milk ..	11.0	5.0	3.9	19.9
Gravity cream (16%)	44.0	5.0	3.9	52.9
Skim milk .....	0	5.0	3.9	8.9
Whey .....	0	5.0	1.1	6.1
3% barley water ....	0	3.7	0	3.7
Milk sugar† .....	0	57.0	0	57.0
Milk sugar‡ .....	0	36.0	0	36.0

\* Calculated from data given in Morse, J. L., and Talbot, F. B.: Diseases of Nutrition and Infant Feeding, New York, 1916.

† Rounded tablespoonful.

‡ Level tablespoonful.

TABLE II.‡ CONSTITUENT CALORIC VALUES OF TOP MILKS.

This table shows the calories of fat in one ounce of the various top milks of a quart of cow's milk. The calorie values of the other constituents are always the same, namely, Sugar, 5.0 calories; Protein, 3.9 calories per ounce.

TOP	contain	FAT	TOP	contain	FAT
2 oz. ....	6.6 cal.		14 oz. ....	2.2 cal.	
3 " .....	6.2 "		16 " .....	1.9 "	
4 " .....	5.9 "		18 " .....	1.7 "	
5 " .....	5.3 "		20 " .....	1.6 "	
6 " .....	4.7 "		22 " .....	1.5 "	
7 " .....	4.2 "		24 " .....	1.4 "	
8 " .....	3.7 "		26 " .....	1.3 "	
9 " .....	3.5 "		28 " .....	1.25 "	
10 " .....	2.9 "		30 " .....	1.2 "	
12 " .....	2.5 "				

§ Calculated from data given by Morse and Talbot, after Chapin and Plsek, Diseases of Children, 1909.

## METHOD OF CALCULATING ANY DESIRED MIXTURE.

The calculation of home modifications is more complicated than in the original "caloric" method, but somewhat simpler than that used in the "percentage" method. Suppose it is desired to make up a mixture containing 355 calories of fat, 260 of sugar, and 70 of protein, in 32 ounces. This would correspond to a 32-ounce mixture of 4% fat, 7% sugar, 1.75% protein, in the "percentage" system. But in order to compute the prescription, we divide 355 by the fat calories of one ounce of cream, as given in Table I:

$$355/44 = 8 \text{ oz. cream}$$

8 oz. gravity cream contains—fat, 352 cal.; sugar, 40 cal.; protein, 31 cal.

So  $70 - 31 = 39$  calories of protein must be added in the skim milk.

$$39/3.8 = 10 \text{ oz. skim milk}$$

10 oz. skim milk contains—fat, 0 cal.; sugar, 50 cal.; protein, 39 cal.

170 calories of milk sugar must then be added; this number divided by 57 gives the number of rounded tablespoonfuls required—3.

Finally, water is added up to 32 oz., the volume required.

Another path to the same end would be to ascertain the proportion between the fat-calories and the protein-calories in our formula by forming the equation:

$(355 : (70) = (\text{fat-calories of 1 oz. of the required top-milk}) : (3.9, \text{the protein-calories of 1 oz. of any milk.})$

From Table II, we see that the mixed top 16 oz. of a quart of ordinary milk will contain the right proportions of these two elements. Of such top-milk,  $355/19 = 19$  oz. must be taken; so the top-milk of a second quart must be drawn upon. These 19 oz. will contain 95 calories of sugar, so about three rounded tablespoonfuls of milk sugar must be added, and the amount made up to volume.

The calculation of the caloric constituents of any mixture already in use is also extremely simple. The caloric values of the various food elements in each of the ingredients are simply multiplied out, and added in turn. Alterations in the amount of any of the constituents without changing the others, or in the volume of liquid, without changing the food value, is also facilitated. All these procedures lend themselves perfectly to calculation by the slide-rule; or some such simple tables as Tables III

and IV may be used. The amount of cream required to give the necessary calories of fat is looked up in Table III. To find the necessary amount of skim milk, this value is subtracted from the total milk and cream shown in Table IV to correspond with the calories of protein required. The calories of sugar thus obtained are subtracted from the amount of sugar required, and divided by 57 to find the number of tablespoonfuls of dry sugar to be added. All of this is much simpler, in practice, than it sounds.

TABLE III. FAT-CALORIES IN GRAVITY CREAM.

AMOUNT OF CREAM	TO ADD FAT-CALORIES	AMOUNT OF CREAM	TO ADD FAT-CALORIES
1 oz. ....	44	10 oz. ....	440
2 " ....	88	11 " ....	484
3 " ....	132	12 " ....	528
4 " ....	176	13 " ....	572
5 " ....	220	14 " ....	616
6 " ....	264	15 " ....	660
7 " ....	308	16 " ....	704
8 " ....	352	17 " ....	748
9 " ....	396	18 " ....	792

TABLE IV. CALORIES OF SUGAR AND PROTEIN IN MILK AND CREAM.

VOLUME	SUGAR	PROTEIN	VOLUME	SUGAR	PROTEIN	VOLUME	SUGAR	PROTEIN
oz.	cal.	cal.	oz.	cal.	cal.	oz.	cal.	cal.
2	10	7.8	18	90	70.2	34	170	129.6
3	15	11.7	19	95	74.1	35	175	133.5
4	20	15.6	20	100	78.0	36	180	137.4
5	25	19.5	21	105	81.9	37	185	141.3
6	30	23.4	22	110	85.8	38	190	145.2
7	35	27.3	23	115	89.7	39	195	149.1
8	40	31.2	24	120	93.6	40	200	153.0
9	45	35.1	25	125	97.5	41	205	156.9
10	50	39.0	26	130	101.4	42	210	160.8
11	55	42.9	27	135	105.3	43	215	164.7
12	60	46.8	28	140	109.2	44	220	168.6
13	65	50.7	29	145	113.1	45	225	172.5
14	70	54.6	30	150	117.0	46	230	176.4
15	75	58.5	31	155	120.9	47	235	180.3
16	80	62.4	32	160	124.8	48	240	184.2
17	85	66.3	33	165	128.7			

To use such a method as the one outlined above, it would be necessary to develop a new way of thinking of infant feeding. Especially in beginning a diet, we should have to learn to guess the amount of the various food elements, not the volume of a mixture as at present, which should first be tried. Table V is calculated from data given by a standard text-book, indicating a rational trial diet for infants of various ages. Once established, the diet would be modified to suit the particular baby, just as at present in the "percentage" system, except that the changes, like the original formula, would be calculated in calories.

TABLE V.\* TRIAL FORMULAS FOR AVERAGE WELL

	FAT cal.	SUGAR cal.	PROTEIN cal.	TOTAL CALORIES cal.	VOLUME DAILY oz.
First food..	28	57	6	91	10
First week	90	110	15	215	16
1 month ..	177	157	25	359	20
2 months ..	230	190	44	464	24
4 " ..	355	290	70	625	32
6 " ..	400	285	90	775	36
8 " ..	465	330	130	825	42

\* Calculated from data given in Morse, J. L., and Talbot, F. B., *Diseases of Nutrition and Infant Feeding*, New York, 1916.

## CONCLUSIONS.

1. The method of calculating milk modifications according to the absolute caloric values of the respective food elements is as rational as the present methods of calculation by percentage composition and volume, or by total caloric value.
2. The use of the caloric as a unit in expressing the composition of milks is of advantage, in that all food elements are reduced to a common standard.
3. Such a view of the infants' diet might lead to a clearer comprehension of the subject by some practitioners.
4. It would allow of easy manipulation of the fluid volume apart from the food value, of various mixtures; and might lead to the accumulation of more data concerning the effects of alterations in fluid volume.
5. It would facilitate the extension of the calculation of the diet into late infancy, when desirable.
6. The calculation of modifications would be simpler in many ways, and more easily understood, than under many of the present systems. Alterations of one constituent without changing the others would be particularly simplified.
7. But the possible advantages gained by such a method of calculation are probably scarcely sufficient to warrant its adoption in place of the present well-tried and well-known procedures.

#### AN EXPERIENCE WITH THE SCHICK TEST AND TOXIN-ANTITOXIN AND A PLEA FOR THEIR USE IN THE EXTINCTION OF DIPHTHERIA.

By THOMAS E. LILLY, M.D., SHIRLEY, MASS.,  
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In June, 1915, there occurred an outbreak of diphtheria at the State Industrial School

\* Read before the Massachusetts Association of Boards of Health, in October, 1919.

for Boys in Shirley, Mass. The usual method of taking cultures of the inmates of the infected cottages, quarantine of all persons having positive throats, and passive immunization of the inhabitants of the school proved successful for a time, but did not permanently eradicate the disease, as the occasional appearance of new cases of a mild type showed.

The lack of modern hospital facilities and the intimate relation of the inmates of the school made the establishment of an effective quarantine very difficult. The taking of mass cultures was practised to such an extent that within a year more than 10,000 combined nose and throat cultures had been taken and the anti-toxin was administered to the 250 inmates at monthly intervals.

In spite of the strictest quarantine obtainable, and the above mentioned prophylactic measure, we had occasional clinical cases, and carriers were constantly present in the school. An interesting feature in connection with this condition was noted that a great many cases that were diagnosed bacteriologically as positive proved negative by virulence test. Whether these were cases of "Hoffman Bacillus" or an attenuated non-virulent Klebs-Loeffler bacillus is an interesting question. The fact, however, that so many of this type were found among patients who had been chronic carriers not only indicated that the latter conclusion was correct, but made the matter of the continued taking of cultures questionable.

It was suggested by the officials of the State Health Department that by communicating with the New York City Department of Health we might be able to obtain toxin-antitoxin for active immunization. The New York City Health Department very kindly agreed to furnish us the required material upon condition that we would administer it only to boys having positive Schick reaction. The Schick test, it may be explained, is a test obtained by injecting intracutaneously, *i.e.*, between the layers of the skin, one-fifteenth of the minimum lethal dose for the guinea pig of diphtheria toxin. If the person injected has no natural or acquired antitoxin in his tissues there appears in from 24 to 48 hours a small localized, sharply circumscribed area of redness which persists for from seven to ten days, leaving a pigmented area or brown spot which in some cases remains indefinitely and usually desquamates in small scales, and in all cases



persists in proportion to the severity of the reaction.

In some cases, most often among natural immunes and among those who have been immunized with toxin-antitoxin, a reaction occurs which is known as a pseudo-Schick reaction. This reaction is more pronounced, appears earlier, and is more diffuse and darker in color than the true reaction. The pseudo-reaction consists of a dusky red spot larger than the true reaction and surrounded by a secondary areola which is not sharply circumscribed but fades into surrounding normal skin and usually disappears in from 48 to 72 hours, seldom leaving pigmentation or sealing.

Both true and pseudo reactions oftentimes occur in the same individual, the diagnosis being made by the persistence of the true reaction and the resulting pigmentation and desquamation.

The technique of the Schick test is described by the Massachusetts State Department of Health as follows:

"It is all important that the test be made properly. Inject 1/10 cc. of the diluted toxin (representing 1/50 of the minimum lethal dose for a 250-gram guinea pig) intracutaneously, *not subcutaneously*.

A definite wheal-like elevation in the skin, and movable with it, shows that the injection is properly made. A good 1 cc. syringe with a fine needle is essential."

After a little practice the test can be quickly given to a large number of persons. It is absolutely harmless and gives no constitutional reaction whatsoever.

The writer finds that in his experience the Schick test not only gives us a means of distinguishing immune from susceptible persons, but it enables us to predict with reasonable certainty the comparative severity of cases of diphtheria in different susceptible persons.

To comply with the wishes of Dr. Abraham Zingher of the New York City Health Department the Schick test was given to all our inmates with the following results: Number given Schick test, 257; positive, 148; negative, 109. The ages of these patients range from 15 to 21 years. The susceptible ones were then given three doses each of 1 cc. of toxin-antitoxin at intervals of seven days.

In only about 33% of those injected was there any general reaction and in a much smaller number some slight local reaction. The

constitutional symptoms varied all the way from a slight malaise to fever (100 to 103 F), frontal headache, muscular pains and nausea with vomiting. In the most severe cases all disagreeable symptoms appeared in about 18 hours and had disappeared before the expiration of 48 hours. I wish to say in passing that during the past two years, I have used the preparation made in the Massachusetts Health Department laboratories and I am pleased to record that from their use there is scarcely ever any of the after effects just described. The toxin antitoxin prepared by the Massachusetts Department of Health is issued in hermetically sealed glass ampoules each containing 1 cc. or enough for one dose of the preparation.

The general disturbance was much less after the second dose and almost nil after the final injection. Two months later, all the boys given the toxin antitoxin were given a second Schick test. Out of the 98 only 28 showed a slight reaction after 72 hours and 13 showed a very slight pigmentation at the end of one week. Three months after the immunization 94 of the boys who were positive when given the first dose were again given the Schick test.

The reason for not giving the Schick test to the whole number of positive cases at this time was because in the meantime several of the boys had been released on parole from the school. At the end of 72 hours, only six showed a slight reaction, and at the end of one week, six showed a slight pigmentation at the sight of injection. Seventy-two gave pseudo-reaction, which disappeared after the first 72 hours and left no pigmentation.

Two boys became ill with diphtheria after receiving two injections of the toxin antitoxin, and before receiving the third. One boy contracted diphtheria the day following his last injection. These cases were treated with ordinary diphtheria antitoxin and recovered promptly.

We have now been using this means of immunization for nearly four years and during the past year have not attempted to classify immunes from non-immunes but have given every new inmate the toxin antitoxin. One reason for not using the Schick test at this time was the saving of time in the immunization of new boys, as the large number of new commitments has been so constant it was deemed safer for the welfare of the school population to be-

gin the immunization at once without waiting for the result of a Schick test.

As, since using the product of our Massachusetts laboratories, we have had very little constitutional reaction and at no time any anaphylactic symptoms, it was deemed by the writer a wiser course immediately to inject every new boy with the toxin antitoxin in order to shorten as much as possible his period of susceptibility.

It is the writer's opinion, however, that in institutions consisting of a more permanent population, it would be better to use the Schick test to differentiate the susceptible from the immune persons, particularly where new inmates could be segregated from the older inmates and to some degree from each other until their degree of immunity could be determined.

Further to illustrate the variable length of time required to immunize susceptible persons, and to emphasize the fact that active immunization by this method is not rapid enough to be of use to persons recently exposed to the disease, I wish to cite with his permission the experience of Dr. F. A. Finnegan, district officer of the Massachusetts Department of Health for the Wachusett District, at the Baldwinville Hospital Cottage for Crippled and Epileptic Children.

The epidemic began in October, 1917. Like the epidemic in the Shirley Industrial School, the disease appeared at varying intervals of time for several months. All inmates were cultured and ordinary diphtheria antitoxin was given in immunizing doses 1,000 to 1,500 units to all contacts without satisfactory results.

The Schick test was given February 11, 1918, to 87 inmates, all of whom had previously had diphtheria antitoxin. Thirty-three were positive and fifty-four negative. All positive cases were given toxin antitoxin.

One c.e. was given every week for three weeks with one exception, that of a child who contracted diphtheria after his second dose had been given.

These patients, who were immunized February, 1917, were again given the Schick test in July, 1918. All were negative but one child.

One child became ill with diphtheria March 31, 1918, twenty-three days after his third injection with toxin antitoxin when evidently immunity has not yet taken place. He was again

tested in July, 1918, and was still positive Schick but was negative in May, 1919.

This case undoubtedly shows that an individual idiosyncrasy often exists, making the immunity very late in its occurrence. In this institution there were absolutely no anaphylactic symptoms among the immunized children.

At various times since our active immunization, patients have reported with sore throats, having tonsillar exudates, and who were positive upon bacteriological examination. These cases were given the Schick test and were found to be negative and recovered without the use of antitoxin. In these cases, while they were strictly quarantined a diagnosis was made of follicular tonsillitis in diphtheria carriers. From his experiences the writer has drawn the following conclusions:—

That in institutions, schools, or communities where diphtheria has been prevalent for a considerable period of time, the universal taking of cultures, excepting in clinical cases of sore throat, is practically useless:

That a non-virulent bacillus is often found to be persistent in the throats of so-called chronic diphtheria carriers;

That repeated passive immunization with diphtheria antitoxin does not protect families, schools, or institutions, and that such immunization lasts less than three weeks:

That immunity to diphtheria is both absolute and comparative;

That toxin antitoxin *does* give absolute immunity to diphtheria when more than one month has elapsed after its administration, and that it causes no such troublesome and alarming reaction as antitoxin often does, and that the immunity persists indefinitely;

That toxin antitoxin has no curative properties and does not immediately protect against diphtheria. In clinical cases large doses of antitoxin should be used instead of toxin antitoxin for both patients and contacts;

That the Schick test is not rapid enough to be of immediate use in cases exposed to clinical diphtheria and should be used only to separate immunes from non-immunes.

That the Schick test and active immunization should be used in schools, camps, institutions and communities where diphtheria pre-

sists and where there is no immediate demand to protect life.

The writer's four years' experience with the use of toxin antitoxin in the prevention of diphtheria, during which time he has immunized more than one thousand persons, every one of whom, when available, has been given the Schick test after periods, varying from three months to three years from their initial dose of toxin antitoxin and practically all of whom, especially after the longer periods, give a negative Schick reaction, has made him optimistic enough to hope that in this method we have a means of exterminating diphtheria.

We all know that smallpox is almost a medical curiosity through the persistent use of vaccination.

We know that typhoid fever in communities under proper health supervision is of unusual occurrence and that by the use of typhoid prophylactic treatment has been practically driven out of our Army and Navy.

We have seen a statement from Surgeon-General Gorgas recently that yellow fever, that plague of tropic latitudes, has been banished from the face of the earth. In view of these marvelous results of modern scientific medicine, is it too much to expect or to hope for that by appropriate legislation compelling all school children, who are admittedly the greatest carriers of diphtheria, to submit to classification by the Schick test and immunization of all non-immunes by the toxin antitoxin method, we may be able to accomplish as much in the extinction of diphtheria as has been done in the above mentioned diseases? Considering the great loss of life as well as the serious sequelae of this disease, let us ask ourselves if any greater boon could be given the human race, particularly the younger portion, than to make the incidence of this terrible disease practically negligible.

It is unquestionably the duty of those who have an opportunity to investigate this method of immunization and, if they find it effective, to educate first the medical profession and through it the public, with the end in view of obtaining legislation compelling the administration of this prophylactic to all children upon entering school and later in life, if necessary, to obtain permanent immunization to this dreaded disease.

## PSYCHOSES ACCOMPANYING INFLUENZA: CLINICAL FEATURES AND PROGNOSIS.\*

By EGBERT W. FELL, M.D., CINCINNATI, OHIO.

PSYCHOSES accompanying influenza have been the subject of comment after epidemics since early times, a short summary of the literature in this regard being given by Menninger<sup>1</sup> in a recent article. The epidemic of a year ago did not call forth the number of reports that might have been expected, and that the number of psychoses would warrant. Many of the reports on the medical aspects of influenza mention the frequent accompanying delirium and the occasional development of a severe following psychosis. Especially in army camps and hospitals was the frequency of delirious states often commented on. Menninger<sup>1</sup>, Burr<sup>2</sup>, Harris<sup>3</sup>, the writer<sup>4</sup>, and others have published articles dealing with the influence of influenza in the recent epidemic, in precipitating psychoses and in changing their clinical aspect.

As a result of recent studies, a number of points are now sufficiently well established to be of help in dealing with future similar conditions; for instance, a paresis may be brought to light by influenza, or some existing condition (cardio-renal disease) may be so aggravated as to develop the mental symptoms which often otherwise accompany this condition. An influenza may alter the course of an existing psychosis by hastening it, as in the following case: A boy aged twenty, who had finished high school, and for the past two years had been working on his mother's farm, became interested in hygiene in December, 1918. He became very careful of his diet, but did nothing so peculiar as to attract his relative's attention to his mental condition. The latter part of February, 1919, he had influenza from which he made a slow recovery. In March he was noticed to worry a great deal about the hygienic condition of the masses. He read New Thought books, and was always going to invent something but never did. He took no interest in his work, and spent much time sitting by himself. He had causeless outbursts of excitement. When examined, in June, 1919, he did not show hallucinations. He said he was sent to the hospital to write a book telling of his knowledge of the world. He attitudinized and

\* Read at the Forty-fourth Annual Meeting of the Mississippi Valley Medical Association, Louisville, Ky., Oct. 21-23, 1919.

frequently refused to talk or eat. Occasionally he would have a violent outburst, react to voices, and quiet down in a day or two, having no explanation of his conduct except that he was nervous. He is unchanged eight months after his influenza, except that he has become more dull, and not so frequently disturbed.

An influenza may add to a psychosis new features, so as to make a confusing picture, as in the following: An attorney, aged 62 years, had for six months been showing a decided slowing up. He was depressed in a listless sort of way and forgetful. He had lost considerable weight. He had a moderately severe attack of influenza, following which he was delirious, quite restless, and disoriented. When examined, one month after his influenza, he was disoriented and fabricated quite extensively. He thought the hospital was a court-house and would get a little irritated because he was not permitted to go and come as he pleased, as other attorneys were. He would tell in detail of trips he had taken recently, mentioning persons he had seen, etc. His urine showed a few hyaline and granular casts, ankles slightly oedematous. He improved physically, and gradually became less disoriented and fabricated less. He went home much improved four and a half months after his influenzal attack, and has since been quiet, listless and unable to attend to his work—about the same condition he was in before his influenza.

All recent writers are agreed that there is no "influenza psychosis," but the writer has tried to show that there is a series of cases in which influenza could be said, with a degree of certainty, to be the determining factor. In these, influenza does not act as a specific cause, but if there had been no influenza it is a reasonable assumption that there would have been no mental attack at that time. These cases present clinical features which, when looked at as a whole, are rather characteristic and form an overlapping series from a simple neurasthenic depression to a dementia praecox of (usually) the hebephrenic type. The following remarks will be confined to cases of mental disturbance of this type outlasting the acute symptoms for a sufficient time to call for special treatment and consideration, i.e., cases in which institutional care would be considered.

A psychosis of the type under consideration may begin during the course of the fever or during convalescence, usually while the patient is in a run down physical condition. Those beginning during the course of the disease or at the termination of the fever may begin in one of three ways:

1. An ordinary fever delirium and
  - (a) the disorientation and sense falsifications persist in varying proportions for a greater or less length of time after the fever has subsided, or
  - (b) praecox features may develop.
2. A frank depression (or mania).
3. The trouble may be from the first of the dementia praecox type.

Those beginning during convalescence may come on as (1) a gradual deepening of the usual depressed neurasthenic condition; (2) a frank manic-depressive episode of the elated or depressed type; (3) an outspoken dementia praecox with more than the usual amount of disorientation or feeling of confusion.

Taking up first the manic-depressive cases, as being the least complicated, and as naturally following the simple depression in the series, we find that they present the ordinary features of manic-depressive psychosis. The depressed type is the more common in the writer's experience. Defective heredity is present in the majority, and a history of a prior attack is not uncommon. Especially in run down individuals the mental condition is apt to improve quickly, with the physical condition, and taken as a whole, the course is relatively short. In a certain number of cases schizophrenic features develop after a short time, and persist.

The clinical features of the second group, those with more or less the features of a delirium, such as disorientation and sense falsification, vary considerably. There may be a simple disorientation with annoying voices, which may or may not be reacted to, a stupor, or a mixture of delirium with praecox symptoms. These latter are spoken of very aptly by Menninger as "delirium schizophrenoides." The more simple cases run a short course of at most a few weeks, recovering usually with insight but often with amnesia for the height of the psychosis, and at times even for the influenza. Heredity and predisposition are not evident in these cases. Apparent recovery, followed in a

few days by a return of the symptoms, was not noticed so frequently as in exhaustive-infective cases of obscure etiology. As a rule, they appeared to run quite an even course, and improvement once started could be counted on to continue. The cases in which the picture is complicated by schizophrenic symptoms, run a longer course. The termination in recovery is, in fact, often the only distinguishing point between this type and some of the cases that eventually turn out to be dementia praecox.

The cases which eventually turn out to be dementia praecox, third group, often begin abruptly during the course of the fever or during convalescence (usually the latter) with more than the ordinary amount of confusion. They are of especial importance, on account of their frequency (about one-third being of this type) and their hopelessness as regards recovery. They are usually of the hebephrenic type and deterioration advances rather rapidly. There is nothing in the picture when the disease is well established to distinguish it from any other case of dementia praecox.

The writer questions the availability of the data on the frequency of dementia praecox after influenza as an argument in favor of the toxic origin of dementia praecox. The proportion of dementia praecox to all psychoses has not been shown to be greater than the same proportion at ordinary times. The same toxin frequently brings up a manic-depressive psychosis, and it at times brings to light a paresis. A stress may act in the same way. The frequency of dementia praecox and of "dementia praecox-like episodes" in the army has often been commented on. In the presence of stress, toxin, etc., an individual is more likely to develop a psychosis, and it would seem that if we knew enough about his mental make up we would be able to foretell what sort of episode he would have if he should become psychotic.

Before a prognosis is given in a psychosis apparently resulting from influenza, the following points should be considered:—

Did or did not the mental symptoms precede the influenza? There is a very natural tendency to attribute to influenza everything that happens during or after the epidemic. The patient's relatives are very ready to overlook any little peculiarity that existed before his illness. Special care should be taken to inquire into

the history of these cases before deciding that we are dealing with a "flu confusion," and giving a good prognosis.

If the psychosis was pre-existent, what change was made in its aspect, and what change is likely to result in the course? The symptoms of a dementia praecox may be brought definitely to light or an element of confusion may be added.

If the psychosis was a sequel, did the influenza merely act as a precipitating factor in the appearance of some disease of well-known etiology, such as paresis or cardio-renal disease? If such is the case, it can be assumed fairly that the disease will run the usual course of such conditions.

Having proceeded this far, our consideration is narrowed to the more closely related psychoses, of which a brief outline is given above. If the psychosis is of the manic-depressive type, it is likely to run a shorter course than such condition coming on (apparently) without adequate existing cause. Cases in which there are schizophrenic features should be prognosticated guardedly since it has been found that some cases starting out as a depression, quickly assume a praecox complexion. The writer has not observed that predisposition in the form of heredity or of prior attacks had the effect of shortening or lengthening the present one. The cases presenting the infective type of symptoms—disorientation and sense falsifications—run a short course and usually improve steadily with the physical condition. The tendency of all exhaustive-infective psychoses to relapse temporarily should be remembered. The deliria with marked schizophrenic features run a longer course (three, four or more months), and in these, the danger of the patient deteriorating into a dementia praecox should be kept in mind. It should be remembered that the outcome of these cases is always uncertain, that on short acquaintance, the distinction cannot always be made from dementia praecox, and at times only recovery will distinguish the condition. The dementia praecox cases seem to run a more rapid course than usual. Here again, cases apparently of the praecox type, especially those beginning abruptly with considerable confusion, should not be condemned too promptly.



## SUMMARY.

1. A psychosis first noticed after influenza may have been pre-existent and not be influenced in its course by the infection.
2. Influenza may alter the aspect and course of an existing psychosis by hastening it or adding new features.
3. Influenza may precipitate an impending psychosis as paresis or it may aggravate some organic condition (cardio-renal) and bring on the mental symptoms usual to that condition.
4. Manic-depressive psychoses showed marked predisposition and a tendency to early recovery.
5. The infective type of psychosis usually runs an even course and improves with the physical condition. This is not a marked tendency to relapse.
6. Cases apparently deliria with praecox features, or praecox with deliria features, should be treated with considerable consideration prognostically, since recovery may occur when not expected or *vice versa*.
7. Dementia praecox cases may begin as such or with distinctly manic-depressive features or with confusion and disorientation. They run a rather rapid course, and quickly assume (usually) the hebephrenic picture. About one-third of the cases are of this class.

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## THE TREATMENT OF GONORRHEA IN THE MALE.\*

By ARTHUR H. CROSBIE, M.D., BOSTON.

I have been asked to speak to you tonight on the treatment of gonorrhea in the male.

This disease which is, when confined to the urethra, often a simple matter, is rendered dangerous and incapacitating through its complications. In the clinic of the Boston Dispensary, where we see upwards of two hundred such cases each day, I have endeavored to evolve a

simple line of treatment which will give rise to as few complications as possible.

Let us first consider acute gonorrhea. It is most important that this stage should be handled carefully and intelligently in order to confine the disease to the anterior urethra and avoid complications which arise from the posterior involvement.

Advice: On first seeing a patient with acute gonorrhea the whole subject should be gone over carefully with the patient and his confidence gained. He must be brought to see the importance of careful treatment and the dangers that may follow neglect. Let him feel that you take a personal interest in his case. Don't give him medicine and tell him to report when the discharge has gone, but see him often and follow every change. I do not feel as strongly about complete rest as I used to. I do feel that all unnecessary exercise should be avoided but doubt the advisability of putting every case to bed. In all but the most severe cases a man is better off mentally and physically to continue his routine occupation. Regular habits, as much rest as possible and plenty of sleep must be insisted upon. He must be advised to avoid dances and suggestive shows and all things which would tend to excite him sexually. The question of diet should be carefully gone over. Of course, it is unnecessary to state that alcohol in all forms is absolutely contraindicated. As you all know, the diet must be simple and bland. Bear in mind, however, that a man who is doing heavy manual work must have a more liberal diet than a man of sedentary habits. Attention must be given to the bowels. It is important that there should be a good movement daily. A suspensory must be worn from the start and continued until the patient is entirely cured. I feel so strongly on this, that I will not treat a patient unless he wears one. The danger of epididymitis is much reduced by taking the drag off the testicles.

*Internal Medication.* After trying out many things I have come down to two simple old remedies. I use sandal wood oil capsules, three times a day after meals, and before meals a teaspoonful mixture of

Tincture hyoscyamus 3viss

Potassium citrate 3v

Water up to 3iv

The hyoscyamus is excellent to prevent chordee. If chordee is present I give a fourth

\* Read before the Malden Medical Society, Oct. 20, 1919.

teaspoonful at bedtime. The potassium citrate helps to render the urine bland. I will consider water under internal medication, because I feel that a large amount of water is more important than any other thing we can do. Enough water should be taken so that the urine almost entirely loses its color. The patient should be instructed to drink at least a glass of water every hour during the day. This will render the urine bland and keep the discharge frequently washed out.

We will now pass to local treatment. Unless there is considerable oedema of the glands and prepuce I start irrigation at once. If there is oedema I withhold irrigations until the swelling has gone down, but start at once then. Where there is oedema, which happens in about 10% of the cases, the patient should be instructed to soak the penis three times a day in water as hot as he can stand for ten minutes. Especial care should be taken in these to ensure all the rest possible. If oedema is not present I give the patient a solution of 10% argyrol and a blunt tipped  $\frac{1}{4}$ -ounce urethral syringe and instruct him to take an injection night and morning after passing urine. It is important that the syringe should have a blunt tip as the long tips injure the mucous membrane of the urethra. This injection of argyrol should be held in the urethra, by compressing the glans penis between the thumb and forefinger of the left hand, for five minutes by the watch. If this injection causes pain before the five minutes is up, as it not infrequently does at the first few injections, it should be immediately released. It is a good axiom that anything that causes pain in a case of acute gonorrhea is bad. In addition to the self-given injection the patient should report once a day for assurance and advice and a hot anterior injection of some rather bland solution such as potassium permanganate 1-5000. I do not think it matters much which solution is used so long as it is hot, as near to 110° F. as the patient can stand, is copious and non-irritating. Personally, I like permanganate though some prefer simple salt solution. The giving of this injection should be done carefully and never intrusted to the patient. The reason for this is that the argyrol if it goes too far back kills all the gonococci it carries with it while this solution does not. Either a large hand syringe or gravity irrigation may be used. Here, too,

care must be taken to use a blunt tipped nozzle. The injection must be given with force enough to dilate the anterior urethra momentarily and then the fluid allowed to run out freely. If pressure is kept up too long the cut-off muscle will relax and allow the fluid to go all the way back, which must be avoided. At least a quart of fluid should be used at a time. Under this treatment, as a rule, the discharge quickly ceases, but the treatment should continue just the same for at least four weeks from the onset of the disease. Each day when the patient reports he should pass his urine into two glasses, in order to watch for posterior involvement. If the second urine becomes hazy showing posterior involvement I give very light prostatic massage daily. After the discharge is quiescent the visits need not be so frequent but the patient should be seen two or three times a week at least.

At the end of about four weeks, if the discharge has stopped and the gonococci disappeared, as usually happens, and both urines are clear, with shreds in the first, I discontinue the medicines given in the acute stage, stop argyrol and permanganate injections. Internally I now give only hexamethylenamine grains vii ss. three times a day. I now give an anterior injection of silver nitrate 1-6000. If this starts up a discharge, as sometimes happens, the patient should go right back to the treatment of the acute stage. If there is no reaction to the silver nitrate in about two days another anterior injection of silver nitrate 1-4000 is given. This is continued every other day for about a week. If he is still without symptoms an anterior and posterior irrigation is given by hydrostatic pressure, preferably with 100 cc. syringe. I like this method of filling the bladder much better than by the catheter, as in forcing the fluid into the bladder the whole urethra is dilated. With about 200 cc. of fluid in the bladder the prostate is massaged and the fluid then passed out. At the next visit sounds are passed to make sure that there has been no stricture formation. If the patient is still without symptoms at the next visit, a massage test is given. The prostate is massaged on a full bladder and the urine is passed into a sterile glass. The sediment from this is stained and examined carefully for leucocytes and bacteria. If after three such tests, at intervals of one week, no evidence of disease is found, the

patient is discharged cured. To make absolutely sure, I generally ask a patient to return again in about two months for a blood test.

We will now take up chronic gonorrheal urethritis, commonly known as gleet. This is to me more interesting than acute gonorrhea because many of these cases are so stubborn and not infrequently the patient has been told that he can never be entirely cured. I have yet to see one that under proper treatment could not be cured.

The first step is to make a careful examination of the discharge, if any is present. If there is no discharge the prostate should be massaged on a full bladder and the sediment from this carefully examined for leucocytes and gonococci. A four glass test can be made to locate the amount of trouble in the urethra, prostate, or bladder, but I do not feel that this is very essential as I am sure that in all cases of chronic urethritis the prostate and vesicles are involved and it is there that the attack must be centered. The examination with the urethroscope is interesting, showing, often, patches of granulation tissue in the posterior urethra, but these are always secondary to the inflammation in the prostate and vesicles and will clear up as the prostate and vesicles do. I have given up entirely local applications through the urethroscope. I have also given up deep instillations of silver nitrate as I feel that they do not reach the real trouble and sometimes do a good deal of harm. Having completed our tests, our treatment is guided accordingly. If gonococci are present in the discharge go back to first principles and treat the case just as you would acute gonorrhea until the discharge is free from gonococci. If no gonococci are present in the discharge, which is usually the case, we are ready to proceed.

The only medicine I use is hexamethylenamine, which is just enough to discourage the growth of bacteria in the bladder. Aside from this, I do not believe it has any effect on the disease. All patients are made to wear a suspensory until cured. The diet can be more liberal than in acute gonorrhea, but all irritants are tabooed as also is alcohol. More exercise can be allowed, especially after the treatment is well under way, and you find that rigorous treatment does not produce a flare up.

Chronic urethritis can easily be overtreated. I make it a rule to treat not oftener than twice

a week and not less than once a week. Regularity is most important. If a patient does not stick to business and come regularly I refuse to continue the treatment. It is a waste of time and money. When starting treatment you must feel your way, always being ready to go back to first principles if there is a flare up.

The first treatment consists only of an anterior injection of silver nitrate 1-4000. If this is stood all right the second treatment is an anterior and posterior injection of silver nitrate of the same strength. At the next visit sounds are passed up to the point where they are tight in the deep urethra. At this time one discovers the presence of a stricture if one is present. If there is a stricture it is dealt with next, either by dilating or cutting, depending on its rigidity. We now come to the most important part of cleaning up these chronic cases. In passing sounds, you may find that they pass easily up to say No. 27 French. You feel sure that there is no stricture and you may feel that there is no need of instrumentation. In that you would be wrong. The posterior urethra is normally very elastic, much more so than the anterior urethra. It should stretch easily, without bleeding, up to No. 38 French. Take a chronic case that admits a No. 27 sound and try stretching up to No. 38 and you will get profuse bleeding with a good chance of getting a perineal abscess. In most of these chronic cases, due to the long standing inflammation in the prostate and vesicles the submucosa of the deep urethra becomes infiltrated with leucocytes and small round cells and instead of being elastic becomes a rigid tube. Our problem is to bring back the normal elasticity of this portion of the urethra. This is done by gradual dilatation with the Kollmann dilator. In the clinic I never allow the assistants to gain more than one point with the dilator at a treatment. The routine is as follows: If on passing sounds it is found that No. 27 French is tight in the posterior urethra, at the next treatment the Kollmann dilator is used to No. 28. The patient urinates into two glasses and these are observed to determine the number of shreds and the amount of turbidity. If the urines are turbid great care must be taken in dilatation. It is usually better to wait until the urine is clear with shreds. After urinating the dilator is passed and the urethra stretched to the desired point. The dilator is then removed and an an-

terior and posterior irrigation given with silver nitrate 1-4000. About 200 cc. is left in the bladder and then the prostate should be thoroughly massaged. This massage should not be violent, but should be firm enough to express pretty thoroughly the mucus from the prostate and vesicles. The massage, unless too painful, should last about five minutes. The fluid is then passed from the bladder and the amount of detritus observed. At the next treatment there is no dilatation, only anterior and posterior irrigation and massage. I find it better, as a rule, to dilate only once a week. If at any time there is any sign of increased irritation, shown by increased frequency or the urine becoming turbid, the dilatation should cease until the urine again becomes clear. The stretching process is continued until the posterior urethra dilates easily without bleeding up to No. 38 French. If, as frequently happens, a point is reached which causes bleeding, no attempt should be made to pass this point until bleeding no longer occurs. One reason that so many men are afraid of the Kollmann dilator is that they try to do too much at one sitting.

After the urethra dilates easily up to No. 38 French, if there is inflammation of the prostate and vesicles the irrigation and massage can be continued with an occasional dilatation. When the patient has three negative massage tests, at intervals of one week, he can be discharged cured.

Let us now consider some of the common complications of gonorrhea. Complications, when they do come, are very apt to be the fault of the patient or the fault of a too zealous physician. Epididymitis is one of the common complications. When it appears all local treatment must be stopped for a time. All very acute cases should be operated on at once under local or general anesthesia. After puncturing the abscesses in the epididymis the process rapidly clears up and local treatment can be started again in about a week. In cases not operated on the beginning of treatment is very apt to cause a recrudescence of the trouble. I have yet to see a flare up in a case that has been operated on. Of course, in all cases the appearance of epididymitis means posterior involvement and this must be cleared up when the right time comes. Follicular abscesses, when they occur, should be opened preferably through the urethra when possible.

Stricture, when possible, should be gradually dilated, never divulsed. A stricture which can be dilated leaves less scar tissue than one that has been cut. My feeling is that we cut fewer strictures than we used to. A thing to be remembered is that there is nearly always inflammation of the prostate and vesicles accompanying a stricture.

Gonorrheal rheumatism is always an unpleasant complication. I have thoroughly tried out vaccines and have given them up. I devote my whole energy to clearing up the local process in the prostate and vesicles. When this is done the inflammatory process in the joints stops. In some stubborn cases it becomes necessary to open and drain the prostate and vesicles through the perineum. These are the only cases in which I resort to this operation.

Acute inflammation of the prostate gland requires rest in bed, hot rectal irrigations and light massage. If an abscess forms there may be acute retention requiring catheterization. Most of these abscesses drain off through the urethra, but occasionally one has to be opened, either through the perineum or through the rectum. Sometimes these abscesses rupture into the rectum spontaneously. When they do they always heal without trouble. Of course, when the acute stage has subsided there is always a chronic inflammation left behind which must be cleared up.

Gentlemen, there doubtless are many points in this paper that I have not made perfectly clear, I hope the discussion will bring these out.

#### TISSUE INJURY AN IMPORTANT FACTOR IN THE DEVELOPMENT OF TUBERCULOSIS.

BY HERBERT F. GAMMONS, M.D., DALLAS, TEXAS,  
*Superintendent, Woodlawn Tuberculosis Sanatorium.*

DURING the past few years evidence has been accumulating emphasizing the part played by the individual cells in resisting tuberculous infections.

Krause<sup>1</sup> has shown how the cells mechanically wall off the bacilli and their poisons by the formation of the tubercle.

It has been taught in the past that tubercle bacilli evade the blood stream except when the resistance has fallen just before death. Krause<sup>2</sup> has shown that tubercle bacilli in many in-



stances invade the blood stream and, circulating through the tissues by the carrier, lodge in different areas, producing disease where the conditions are more favorable for their activities.

While the condition of a patient's blood as regards the antitoxic and bactericidal properties has a profound influence in resisting infection and disease, still the condition of the individual cells often apparently determines the outcome of the infection.

When one considers the disease tuberculosis in a given patient he concludes that as a rule the condition is a chronic one with perhaps an exacerbation as a result of the extension of the disease process into normal tissue and, further, many of these patients have had tubercle bacilli circulating through their bodies to a greater or less extent for many years.

Taking into consideration the fact that practically all adults have had a tuberculous infection, one realizes the importance of tissue injuries in the determination of the point of localization of tuberculous complications. These injuries may be of a mechanical, physical, or chemical nature.

The following cases seem to indicate that injury of the tissues in the different areas affected has been an important factor in the determination of the localization of the tubercle bacilli and that the resistance offered by the fixed cells is greater in many instances than is that offered by the antitoxic and bactericidal properties of the blood stream.

**CASE 1.** Male. Family history of tuberculosis. In 1909 patient fell, injuring right knee. Knee continued sore and swollen until 1915 when the soreness and swelling increased and the knee joint was resected. Diagnosis, tuberculosis of the knee. In 1917 this patient came under my observation. Examination showed him to be suffering with advanced pulmonary tuberculosis. The history and physical findings showed that the disease in the lungs had existed for a long time previous to the injury.

**CASE 2.** Male. Family history of tuberculosis. In 1911 patient injured right knee by falling against a stone. The injured knee gradually increased in size and it also became very sore. In 1913 it was decided to amputate the leg above the knee. Diagnosis, tuberculosis of the knee. I saw the patient in 1919 and examination showed that the patient had a moderate amount of pulmonary tuberculosis and

the physical signs with the history showed that the disease had existed for some time previous to the injury.

**CASE 3.** Male. Family history of tuberculosis. In 1903 patient was kicked by a horse, injuring the tissues in the vicinity of the right ilium. Tissues at the site of injury remained more or less painful and in 1910 an abscess formed, which was opened and discharged pus bacteriologically positive for tubercle bacilli. In 1910 this patient injured the right ankle, which continued sore at intervals. In 1917 this patient came under my observation and showed a chronic tuberculous infection in both lungs. Later the ankle joint injured broke down and was found to be tuberculous. X-ray examination of the right ilium showed it to be tuberculous.

**CASE 4.** Male. Family history negative. In September, 1918, patient had a bad contusion of the right hand. The hand continued sore and swollen and a few months later x-ray examination showed a tuberculous condition of the small bones of the hand in the injured area. Physical examination showed a pulmonary involvement which, according to the history and physical signs, was of long duration.

The above cases seem to show that the injury to the tissues in the different areas was the cause of the localization of the tubercle bacilli and the development of disease. Furthermore, while there have been many injuries to the tissues of tuberculous patients without any complication developing, still patients with pulmonary tuberculosis should avoid all possible injuries.

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**ELECTION OF DR. SIMON FLEXNER.**—It has been announced that at a recent meeting of the Société de Pathologie exotique at the Institut Pasteur of Paris, Dr. Simon Flexner of the Rockefeller Institute for Medical Research was elected an associate member. He has been elected also to associate membership in the Société Royale des Sciences Médicales et Naturelles of Brussels and to the Société Belge de Biologie of Brussels. On December 22, Dr. Flexner was made a corresponding member of the Bataafsch Genootschap der Proefondervindelijke Wijsbeerte of Rotterdam, Holland.



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### MATERNITY BENEFITS.

LAST year several bills for maternity benefits were under consideration in the Legislature. One of them passed in the Senate and very likely would have passed in the House had it not been held up in the Committee on Ways and Means in order that it might be perfected. Last autumn the former chairman of that committee and now the leader of the majority in the House, Mr. B. Loring Young, asked me as president of the Massachusetts Medical Society to study the different bills, to confer with the Department of Public Health, and to suggest whatever changes would be likely to make such contemplated legislation acceptable to the medical profession, which of course is most intimately concerned. After seeking the advice of several of our District Medical Societies and of the Obstetrical Society of Boston, and after careful consideration by the Joint Committee

of the Massachusetts Medical Society and the Massachusetts Homeopathic Medical Society on State and National Legislation, I offered some suggestions, all of which were accepted. And the following Bill has been introduced into this session of the Legislature:

### AN ACT

TO ENABLE THE STATE DEPARTMENT OF PUBLIC HEALTH TO PROVIDE ADEQUATE CARE FOR MOTHERS AND CHILDREN DURING THE MATERNITY PERIOD.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

*Section 1.* From and after the first day of January, nineteen hundred and twenty-one, the State Department of Public Health shall have charge of the administration of maternity care, in accordance with the provisions of this act.

*Section 2.* Maternity care may be granted for such a period before and after confinement as the State Department of Public Health may determine. Any woman who is pregnant and who desires advice, instruction, nursing, or medical care for herself or infant shall be entitled to the benefits of this act provided that she make application to the State Department of Public Health at least three months before the expected date of her confinement, and provided that she accept and carry out such instructions in general hygiene and infant care as, in the judgment of the State Department of Public Health, her individual case demands, and, in the discretion of the State Department of Public Health, hospital care or home nursing or both medicine and medical care, and such other obstetrical care as may be necessary. No woman, however, shall be entitled to care provided under this Act who shall not have been a resident of the Commonwealth for one year at the time of her confinement or anticipated confinement.

*Section 3.* Maternity cases under this Act shall not be given to a city or town physician, in his or her official capacity. The recipient of maternity care under this Act, if remaining at home, shall be allowed, in all cases, to choose her own physician, subject to said physician's acceptance of the fee schedule for such cases, and other rules and regulations of the State Department of Public Health, governing this Act.

*Section 4.* The State Department of Public Health shall make, and may from time to time add to, alter, amend or repeal, such rules and regulations as may be necessary to carry into effect the provisions of this Act, including rules to define and delimit as accurately as may be possible, the conditions under which, and the

time when women are entitled to benefits under this Act.

*Section 5.* The commissioner of public health and any person or persons duly assigned by him for the execution and enforcement of the provisions of this Act, may, in the discharge of his official duties pertaining thereto, administer oaths and affirmations; and any person knowingly making any false or misleading statement under oath or affirmation so administered shall be guilty of perjury and punishable by the penalties prescribed by law for that offence.

*Section 6.* This Act is hereby declared to be a public health measure and the maternity care under this Act shall be granted free of cost to all persons entitled thereto regardless of their financial condition.

*Section 7.* For the purpose of making necessary preparations for carrying out the provisions of this Act, there shall be appropriated, to be paid out of the treasury of the Commonwealth from the ordinary revenue, to be expended by the State Department of Public Health, a sum not exceeding twenty-five thousand dollars. The provisions of this section shall go into effect July first, nineteen hundred and twenty.

*Section 8.* From and after January first, nineteen hundred and twenty-one, the State Department of Public Health may expend such sums for administering the provisions of this Act and providing maternity care thereunder as may be annually appropriated by the general court.

Regarding this Bill there is great diversity of medical opinion. Physicians in general are not socialists. They do not like the present Industrial Accident Insurance business. They dread the threatened health insurance measures, of which this Maternity Benefits Bill is very probably only the beginning. Not only as citizens do they object to the tremendous increase of taxation involved in such paternalistic governmental measures, but professionally they object to such interference with their freedom.

Overworked country doctors complain that even the present state and national requirements are almost unbearable. Bad enough, they say, to have to particularize death certificates to suit the State House and to count their morphine tablets and make record of every dose of paregoric, without having to send to the Department of Public Health the pelvic diameters and blood pressures of their obstetric patients. Moreover, some fear that when the State pays the bills, the women will demand continuous medical attention during labor, instead of being content, as many are now, with having the

doctor present just at the last, and with, perhaps, a couple of subsequent visits. Nor are the obstetric specialists in any agreement regarding the probable effects of the Bill. Some believe it will reduce both maternal and infant morbidity and mortality by requiring greater prenatal and obstetrical care than is now generally given. But others see in it all sorts of disadvantages.

In all the discussions much time has been wasted over economic and political issues. We were fairly warned that some such legislation is extremely likely to be passed. And, as Governor Coolidge recommended it in his annual message, no veto need be expected. That we were given every chance to make the Bill unobjectionable was certainly a courtesy to be grateful for and to take advantage of. Nor is it yet too late to ask for amendments. And one purpose of this communication is to ask for further suggestions from the profession for bettering the Bill.

The joint committee on legislation decided that, even if possible to defeat the measure, it would not be wise for the state medical societies to appear in opposition. Therefore it was voted to take part, as we were asked to do, in framing the Bill, and if our suggestions were adopted, to support whatever received the endorsement of the Department of Public Health that will have full responsibility in carrying the measure into effect. Here is an instance of the great responsibility resting upon this committee when there is no unanimity in the medical profession regarding proposed legislation. And in such instances it is incumbent upon those of us who are in favor to give our reasons: Here they are:

1. This Bill is intended for the benefit of our patients, not for our benefit. And yet, in the large and true view, whatever benefits our patients also benefits the medical profession. The only real question then is if this legislation will really benefit Massachusetts families.

2. While the rich in their own homes, and while the poor in lying-in hospitals can now have excellent obstetrical and nursing service, and while in the smaller communities all families in such times of need are perhaps well served, there yet can be no doubt that at least in our larger cities families of moderate means cannot afford and so do not receive first-rate service.

3. In other conditions of helplessness, by means of state and other civic institutions, and by various semi-charitable organizations, families having only small or moderate incomes can get excellent professional and nursing service. Is there any reason why such families shall not likewise be helped when the mother's health and even life is in jeopardy—to say nothing of that of her infant before or after its birth?

4. In the division into specialties the medical profession is making great advance in usefulness. But this is not as true of the obstetrical specialty as it is of some others. To begin with such specialists are as yet few and far between. Nine-tenths, if not more, of our babies are born into the hands of general practitioners,—*per vias naturales*, it may be remarked in passing. One potent reason why obstetrical specialists are still few is because it is so generally by obstetrical service that the general practitioner becomes the family physician; furthermore, and because of this, many physicians undertake obstetrical practice and continue it long after they wish they could afford to decline such calls. Except in the large cities, there is thus small room for would-be specialists in obstetrics. They will have far better chances if this Bill becomes law. For manifestly it will be necessary to provide a supply of consulting obstetricians throughout the State. This will lift the standard of obstetrical practice.

5. The troublesome question of midwives will also disappear. For when the State stands ready to furnish the service needed, both obstetrical and nursing, the lesser fee of the midwives for this combined service of doctor and nurse will lose its present attractiveness.

6. If for no other reason, I am in favor of the Bill because of its promise to provide the proper nursing service that now is unobtainable in most families. In prenatal oversight and in subsequent child-welfare visiting such service has latterly been shown to be fully as beneficial, as in the period of the labor and of the confinement in reducing maternal and child mortality and morbidity.

It scarcely needs to be pointed out that, by the efficient organization and distribution of a better nursing service, great advantages may also confidently be expected by both doctors and nurses.

7. Immense responsibility will devolve upon the Department of Public Health if the proposed Bill becomes law. For while the choice of her physician is allowed to the expectant mother applying for state aid, such choice is restricted to physicians who agree to accept the fees and also the rules and regulations of the Department. This will insure against the employment by the State of physicians whose practice is not up to the standard. Herein it is plain there is rich opportunity for all sorts of trouble. But the acceptance of the other horn of the dilemma would be far worse. For it is plain that in furnishing the service the State in no small measure guarantees that it shall be of standard quality.

ALFRED WORCESTER, M.D.,  
*President, Massachusetts Medical Society.*

INFLUENZA IN CHICAGO.—Four deaths from influenza and sixteen from pneumonia, and three hundred and ninety cases of influenza and one hundred and fifteen of pneumonia were reported in Chicago on January 16. Under the direction of John D. Robertson, Health Commissioner of the city, three thousand nurses will be sent to different parts of the city. On January 15, there were reported at the Great Lakes naval training station 475 cases of influenza, with one death.

#### THE ARMY MEDICAL SERVICE.

THE activities of the Medical Department of the Army for the year 1918 represent the highest achievement of medical service in this country. Never before in our history has so large an armed force been in the field; never before has the medical profession of the United States been called upon to serve almost as a whole in the Medical Department of the Army and Navy. A comparison of the maximum strength, three hundred thousand men, during the Civil War with the maximum strength during 1918, over three and one-half millions, gives some idea of the tremendous expansion and rapid development demanded of the Medical Department during the war. Practically the entire medical profession of the country, guided by the best professional and administrative ability of the leaders of the profession and supported by the patriotic service of the general

body of physicians, protected the health and lives of our men at home and abroad.

The work of the Medical Department consisted of six main fields of activity: (1) the procurement and training of the Medical Department personnel; (2) the expansion of hospital facilities in this country; (3) the physical examination of volunteer and drafted men; (4) the protection of military forces from disease; (5) the procurement and distribution of medical and hospital supplies; and (6) the care of the sick and wounded. The Report of the Surgeon General of the United States Army for the year ending June 30, 1919, describes the work of the Medical Department.

In order to make it possible for the Medical Department to keep pace with the expansion of the military forces of the Army, it was necessary to procure and train a large number of physicians. The physically and professionally unfit were eliminated, and those selected were given a brief intensive course of training to fit them for their duties in the military service. At the beginning of the war, the entire Medical Department, including commissioned officers, contract surgeons, army nurses, and civilian employees, numbered 8,634. During the war, this number was increased to 354,796, almost three times its original strength. The Medical Corps increased from 833 to 30,591.

The expansion of the hospital facilities in this country had to increase proportionately as the Army expanded from one hundred thousand to two million. It was necessary to provide adequate hospital facilities to care for both those sick from ordinary causes in the camps in this country and those additional men who became incapacitated by epidemics of ordinary infectious diseases and influenza. Hospitalization had to be provided also for those who returned sick and wounded after service overseas. Among the Expeditionary Forces it was necessary to provide hospital accommodations for those wounded in combat as well as for the usual percentage of sick and injured. Hospitals of one or two thousand beds, and sometimes larger, were organized with almost unbelievable rapidity. So far as the records of this country show, our hospitals had never been so crowded as they were during the influenza epidemic. In the American Expeditionary Forces there were provided hospital facilities, including the emergency beds and those in the convalescent camps, for fifteen men out of every hundred. Some of

the hospital centers for our forces provided twenty-five thousand or more beds.

Of no slight importance was the service of the Medical Department in the physical examination of recruits. At least one-third of all the men who offer themselves for enlistment in the Regular Army are rejected. Those physically unfit for service had to be eliminated, and of those accepted, records had to be made upon entering the Army, during military service, and at the time of demobilization. There were retained for further treatment those soldiers who could be benefited thereby and who desired it, and men who had contracted venereal disease whether they wished it or not.

In order to protect the fighting forces from preventable diseases during their time of service, the Division of Sanitation was expanded to coordinate successfully the efforts of the sanitarians of the Army. Experienced sanitary officers made periodical and emergency inspections at the various camps in this country and in France to assist and coordinate the work of the camp sanitary officers.

At the beginning of the war, it became necessary for the Medical Department to procure and distribute all medical and hospital supplies. During the years immediately preceding our active participation in the war, the chemical and drug industry and that of surgical equipment was expanded considerably beyond the pre-war status. It was necessary to mobilize the entire productive activities of the drug trade in this country, and to produce sufficient surgical dressings and hospital equipment. The Department is to be congratulated for its success in procuring and transporting medical, surgical, and hospital supplies.

The care of the sick and wounded during the war was an undertaking of tremendous proportions. During the year the total number of sick officers and enlisted men that required hospital treatment or treatment in quarters was 2,833,204, excluding soldiers treated for minor ailments and the treatment of civilians attached to the medical personnel. Of this number, 2,422,262 cases resulted from disease, 182,789 from ordinary injuries, and 228,053 from battle injuries. The total number of deaths from disease was 47,384; from wounds received in battle 13,735; those killed in action and lost at sea, 34,359; from ordinary traumatism, 3,500. Influenza, combined with pneumonia and respi-



ratory diseases, caused 17.33 per cent. of the total admissions for diseases and 82 per cent. of the total deaths. The next important cause of deaths during 1917 and 1918 was measles. Approximately 5.6 per cent. of the men who came into the military service from civil life had a venereal disease; approximately 7.4 per cent. of all the men in the Army were detected with a venereal disease at some time prior to their leaving the United States. Of this number three-fourths had contracted the infection prior to coming into the military service; two-thirds of all that were detected with a venereal disease in the entire Army, during 1917-18, brought the infection in from civil life.

The Medical Department of the Army served with untiring devotion and unselfish effort at a time when the complete and efficient support of the medical profession was needed more than it has ever been needed during the history of our country.

#### IMPORTANT FACTS ABOUT CANCER

The attempt of the United States Public Health Service to place before the public in the simple, straightforward language of its "Keep Well" series of publications the most important facts regarding the early symptoms of various diseases is particularly commendable in its warning about cancer, because of the vital importance of early detection of this disease. A pamphlet issued recently, "Cancer—Facts Which Every Adult Should Know," in all probability represents the first instance in which a national governmental department has attempted educational propaganda work on this subject. The importance of this effort to enlighten the public in regard to one of our most fatal diseases should be recognized and brought to the attention of professional and lay readers.

In spite of the fact that cancer, if treated in its early stages is curable, it has been discovered that this dreaded disease is increasing in America and throughout the world in general. Its mortality rate now ranks with that of tuberculosis, pneumonia, heart disease, and diseases of the kidney. This is due in considerable part to the ignorance of the public in detecting the early stages of the disease; it is hoped that widespread education in regard to the nature and the development of the disease will enable people to recognize the early symptoms of the

precancerous state and will encourage them to seek competent advice for the prevention and cure of cancer.

In 1917, the United States Census Bureau announced a total number of 61,452 deaths from cancer, as compared with 112,821 from pneumonia, 110,285 from tuberculosis, 115,337 from heart disease, and 80,912 from kidney diseases. Furthermore, the recorded death rate shows approximately a two and one-half per cent. increase in cases each year. The fact that it has risen from 61.9 deaths per 100,000 of population in 1900 to 81.6 in 1917 may be explained in part by the improvement in the recording and gathering of vital statistics and to more accurate diagnosis; but it is believed generally that these factors alone do not account for the increase in the disease.

It is unfortunate that the early discovery of cancer is difficult, for it is regarded now as curable if it is detected in its early stages and given immediate and competent treatment. The disease is particularly insidious in that its first attack is usually painless and therefore ignored in the majority of instances. This neglect allows the disease to develop until a major operation is necessary and the chances of cure are considerably diminished and often entirely lost. This situation is not made any less hopeful by the fact that many persons who strongly suspect the presence of cancer do not seek the best medical advice, but allow their condition to become aggravated by advertising charlatans and patent medicines until they are beyond the stage which may be benefited by the best medical and surgical attendance.

The popular beliefs that cancer is contagious and hereditary have been found to be fallacious. The first has resulted often in neglect of those suffering from the disease. The Public Health Service has announced that so far as it can be learned at the present time, there is no germ capable of causing the disease either in human beings or in animals. In regard to heredity, the statistics gathered by insurance companies for many years show that even if both parents died of cancer, it does not follow that the child will develop the disease. It is the tendency to cancer, rather than the disease itself, which may be inherited; if, therefore, in some families there seems to be a particular susceptibility to it, the various members should have some knowledge of the early symptoms and be alert in the recognition of the first suspicious signs.



Cancer is not a constitutional or "blood" disease.

The development of cancer clearly shows the importance of early treatment. The tissues of the body, the muscles, glands, and bones are each composed of a large number of tiny cells, held together by material which may be compared to the mortar used to hold bricks together. These cells are alive, constantly growing and dying off, and sometimes growing not in the usual order, but into a little group of lawless cells which form the nucleus of cancerous development. Any part of the body may be affected—the skin, the breast, the stomach, throat, or any other part. Very often there is formed a small, hard lump which can be detected and successfully removed if it is discovered before it begins to grow and branch off into the surrounding tissues. It is this power of penetration which makes cancer a fatal disease, in distinction to such benign growths as warts. If allowed to grow, the cancerous mass becomes enlarged and minute portions are detached and carried by the circulation of the blood or lymph to other parts of the body, where they continue to live and form new cancerous growths.

Although we do not know just what it is that makes the first cell take on a malignant character, we do know something about the conditions which seem favorable to the change. Continued local irritation of various kinds and benign growths or ulcerations often result in cancer. Burns from pipe stems, for instance, may be frequently the cause of cancer of the lip, and constant irritation from bad teeth may prove to be a factor in its origin. Cancer is caused sometimes among the East Indian races by the chewing of the betel nut, and in the natives of the Kashmir by the burns received from the kangri baskets of live coals which are worn as warming pans. Immediate attention should be given, therefore, to persistent ulcerations, cracks, and sores, warts, moles, or birthmarks which change in appearance or grow larger.

So far as it can be ascertained, no one is immune to cancer. It is true that women are more susceptible to the disease than are men; it has been found that between the ages of thirty-five and forty-three, three times as many women as men die of cancer, and between the ages of forty-five and fifty, twice as many die as a result of it. Cancer rarely results from a sudden injury, but may be attributed in most

cases to some continued irritation. Probably sixty per cent. of cancers of the rectum are first regarded as piles—the importance of thorough medical examination cannot be too strongly emphasized.

The increasing incidence of cancer indicates that the time has come when it is necessary that our people should be educated as thoroughly in regard to the nature of cancer as it has been by the nation-wide campaign for the control of tuberculosis. The United States Public Health Service has undertaken this important educational work, and should be encouraged and supported by the coöperation of the profession and the general public.

#### THE PHYSIQUE OF HARVARD FRESHMEN.

The results of this year's physical examinations of first-year men at Harvard University, reported by Dr. Roger I. Lee, Professor of Hygiene, are interesting and significant, showing an increasing intelligence and enlightenment among parents in the matter of health and disease prevention. The examinations during recent years have shown a continued improvement. This fall it was found that the teeth of very few freshmen had been neglected, only rarely were found cases of serious uncorrected defects of the eye, 43.6 per cent. of the regular first-year men had had their tonsils removed, and a small per cent. had had operations on the nose and throat. These figures indicate that parents are beginning to appreciate especially the dangers from diseased tonsils; in 1914 and in 1919 only four individuals in each group were found upon examination to have tonsils so diseased as to require removal. It is of professional interest to observe that whereas in 1914 many of the freshmen had had portions of their tonsils removed, complete removal was found to be the rule in 1919.

The amount of organic disease discovered by the examinations of this year was comparatively slight: 1.3 per cent. showed organic heart disease; 4.6 per cent. had heart conditions which made supervision desirable; there were no cases of undoubted tuberculosis, and less than one per cent. of freshmen seemed to require supervision for possible lung damage.

In 1916, a system of rating freshmen from a standpoint of bodily mechanics was inaugurated by Dr. Lloyd T. Brown. The examinations in

that year and in 1919 show that eighty per cent. of freshmen do not use their bodies properly. In establishing good habits of bodily use the preparatory school might be of considerable service; if this is neglected at earlier periods, it is desirable that correction be attempted at college. As physical training now is required of freshmen, it will be possible to reexamine them at the end of the year and ascertain any improvement there may be. Lectures to all freshmen on the proper mechanical use of the body and feet, and special training for those whose bodily mechanics have been found to be defective, should result in definite improvement by the end of the year. It is hoped that the fact that physical training is required of first-year men will encourage each freshman to undertake the form of exercise from which he will derive the most individual benefit. There are many, of course, who need only regular exercise; but among the others there have been found various conditions requiring special attention, from those requiring supervision in the pursuance of organized sports to those which show a need for special exercises for the development of the delicate or physically handicapped. Although there is still much to be desired of preparatory schools in physical supervision, and corrective work in colleges admits of further development, at least it is gratifying to discover a greater intelligence among parents and a corresponding improvement in the physical condition of college freshmen. The Harvard examinations of this year give evidence of the value of physical supervision in preparatory schools and of the need of more corrective work in colleges; they give, also, promise of continued improvement in the health of American manhood in the future by means of a more widespread and intelligent coöperation between the school, the college, the parent, and the student.

#### MEDICAL NOTES.

INFLUENZA ON FRENCH STEAMER.—It has been reported that the French steamer *Malte*, from Havre and Vigo, with passengers and cargo for Rio Janeiro and Buenos Aires, arrived at Buenos Aires on January 7 with five passengers dead, seven dangerously ill, and a large number suffering from influenza. The disease appears to be of the most dangerous form of influenza.

PASTEUR INSTITUTE OF SOUTHERN INDIA.—*The British Medical Journal* has published the following summary of the report of the director of the Pasteur Institute of Southern India, Coonoor, for the year ending February 28, 1919. It states that 2,825 Asiatics and 150 Europeans and Eurasians were treated during the year. This shows an increase of 691 among the former and a decrease of 112 among the latter. Six patients died during the course of treatment (4 from hydrophobia, 1 from cholera, and 1 from smallpox). Four died less than fifteen days from the date of the completion of treatment, and 22 fifteen or more days from the completion of treatment. The latter are classed as failures (0.74 per cent.). Including the cases which died less than fifteen days after the completion of treatment the percentage of deaths was 1.05. The bites in most cases (95.6 per cent.) were inflicted by dogs; jackals were responsible for 2.09 per cent. It is stated in the report that when a person is bitten by an unknown dog without provocation, rabies should be suspected and treatment applied for at Coonoor. In a circular giving advice with regard to the immediate treatment of a bite by a dog, the value of the early application of the actual cautery or caustic agents is insisted upon. A superficial wound without pockets can, it is said, easily be sterilized by nitric acid, hydrochloric acid, glacial acetic acid, or undiluted formalin. In a lacerated wound the whole of the exposed tissues should be destroyed by liquid caustic or the actual cautery. A punctured wound should be treated by introducing the caustic into the depths with a glass pipette. The skin should be previously greased to avoid injury to it, and the excess acid may be sucked out of the puncture after about thirty seconds. In both cases it is good surgical practice to excise the whole of the necrosed surfaces a few minutes after the acid application and to sew up the wound in the expectation of obtaining healing by first intention.

#### AMERICAN MEMORIAL HOSPITAL AT RHEIMS.—

A report which has reached New York recently states that during the month of November there were admitted to the temporary building of the American Memorial Hospital at Rheims seventy-six patients, in addition to the fifty-nine patients already being cared for. Of the new cases twenty-one were maternity patients. The dispensary aided nine hundred and thir-

teen patients; the dental clinic received one hundred and forty-five new cases and performed three hundred and sixty-three operations. All of this work is being carried on in the temporary building of the American Memorial Hospital pending the completion of its permanent hospital, for which \$200,000 has been provided. With more than sixty thousand people returned to Rheims, the need for the hospital is greater than ever.

**HONORARY ELECTION FOR AMERICAN PHYSICIAN.**—Dr. Jacques Loeb has been elected an honorary member of the Royal Institution of Great Britain and Ireland.

**TUBERCULOUS SOLDIERS.**—Announcement has been made of an order issued recently by the War Department to provide for the discharge from army hospitals of officers and soldiers who, after treatment for a period of twelve months, are not making satisfactory progress. These men may seek further treatment from the Public Health Service. It has been suggested either that additional governmental hospitals be built in order to insure a continuance of scientific hospital treatment to soldiers who have contracted tuberculosis in the service, or that sufficient compensation be provided by which they may pay their own expenses for treatment, inasmuch as there are probably forty-six thousand men who will be affected by this order, and the Public Health Service will not have sufficient equipment to provide for the care of this large number of men who may come under its supervision by the new order.

**DRUG ADDICTION.**—At two recent meetings of the American Public Health Association, the subject of drug addiction was the subject of considerable discussion, and various opinions on the treatment of drug addicts have been published in a number of medical periodicals throughout the country. Until recently, there has been a tendency to treat narcotic drug addicts as criminals rather than as subjects of medical treatment; but at the present time, drug addiction is regarded by many as a disease rather than as a crime. Among those who have endeavored to point out the error of the older view is Dr. F. S. Bishop of New York, who has published an article on this subject in a recent issue of the *American Journal of Public Health*. Dr. Bishop believes that we are in a transitional stage in our attitude toward the

drug addict, and that serious consideration of drug addiction as a problem of clinical and internal medicine and of experimental laboratory research is a comparatively new department of investigation. He points out that there are, of course, some addicts who are criminals, but they are usually criminals independent of being addicts and as a general rule were criminals before they became addicted to the use of drugs. Others become habituated to the use of drugs in spite of their efforts to be freed from it by various methods of treatment. Dr. Bishop urges the necessity of increased professional skill and technical ability in the treatment of these cases and additional research to determine the true conditions and the most effective methods of educational, scientific, and medical control of drug addiction.

**NEED OF PHYSICIANS IN AFRICA.**—In a recent issue of a French Bulletin, the sanitary conditions in Belgian Congo have been reviewed by Dr. G. Daniel. He reports that sleeping sickness and leprosy are the chief maladies which seem to attack the natives. The tsetse fly is numerous and sanitary supervision of the nomadic tribes is almost impossible. Two sanitary posts have been established near Lake Albert in order to protect important lines of travel. The extent to which leprosy spreads among the Africans is unknown, as it is difficult to obtain statistics because the natives fear the intervention of foreigners and conceal their disease. Some indication of the amount of work to be done in this district is shown by the fact that in one village in which Dr. Daniel at one time treated fifty cases, five hundred presented themselves for treatment on his second visit. The local authorities are ignorant of the symptoms of the disease, and intelligent physicians are greatly needed. Dr. Daniel believes that leprosy is so widespread in the country that international measures should be undertaken to control the disease.

**YELLOW FEVER IN CENTRAL AMERICA.**—A recent report from Tampico, Mexico, states that there is an epidemic of yellow fever in many cities and towns of the states of Yucatan, Campeche, Chiapas, and Oaxaca. Quarantine has been established against Salina Cruz, Frontera, and other ports. It is reported that Vera Cruz is free from the disease.

**AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.**—At a convention held recently at St. Louis by the American Association for the Advancement of Science, Dr. Simon Flexner of the Rockefeller Institute for Medical Research, President of the Association, is reported to have stated that scientists are progressing in their fight on cancer, and that it seems possible that yellow fever may be the first disease to be eradicated by science. Dr. Noguchi, a Japanese scientist, is working on a serum which may prove to be the means of eliminating yellow fever. An adequate preventive has not yet been discovered against influenza, spinal meningitis, or infantile paralysis.

**HEALTH CONDITIONS DURING 1919.**—In the first issue of the *Statistical Bulletin* published by the Metropolitan Life Insurance Company, there is a survey of health conditions throughout the country generally and among the twelve million policy-holders of the Company during the year 1919. Although the year began under unfavorable conditions, it is closed with better health conditions than have prevailed during any year on record. Between January and March, the United States and Canada were still feeling the effects of the wave of influenza, and in fact, many cities were having their most severe attacks of the disease during those months. It was expected that influenza would return this year and result in a high death rate from diseases of the heart and kidneys; many persons who were left in a weakened condition as a result of the disease were expected to die and thus increase the death rate. Contrary to expectations, however, beginning with the month of April and continuing for each month thereafter up to the end of the year, mortality rates fell below the average of the preceding years. Throughout the summer and autumn the rate was unusually low and it did not increase particularly during the latter quarter of the year.

An investigation of the twelve million records held by the Metropolitan Life Insurance Company shows an unusually low prevalence of such diseases as tuberculosis, typhoid fever, measles, whooping cough, diseases of the heart and kidneys, and diarrheal complaints. During the last quarter of the year there was an increase in the death rates from scarlet fever and from diphtheria; but these were not of sufficient importance to influence the total death rates. A marked improvement was noticed in the mortality among negroes.

During the year, the total death rate per 1,000 policy-holders declined from 15.5 in 1918 to 10.4 in 1919, a reduction of 33 per cent. Compared with 1911, the 1919 rate shows a reduction of 17 per cent. Tuberculosis of the lungs during the year was 33 per cent. lower than in 1911; typhoid fever has shown a decline of 69 per cent. in the rate since 1911. The four important diseases of childhood,—measles, scarlet fever, whooping cough, and diphtheria,—show altogether a decline of 49 per cent. in eight years.

**DISINFECTION OF RAILWAY CARS IN ITALY.**—Among the important health problems in Europe is the disinfection of railway cars. Before the war, the Germans had established along the Russian border disinfecting outfits which could disinfect effectively whole cars. In Italy there has been devised a method of developing gas in closed tanks and leading it under pressure to the cars. Some of the products of sulphur have been found to be adequate in disinfecting the backs and cushions of the seats. The liquids used vary considerably in value; some, though efficacious, have fire risk or have persistent odors. Gas disinfection is to be adopted on Italian railways because of the comparative ease of its application.

**INFECTIONS IN FOREIGN COUNTRIES.**—The problem of dealing effectively with communicable diseases is a particularly interesting and difficult one. Thousands of men have been assembled for military service from all parts of the world, and soldiers from centers in which certain diseases have been epidemic have mingled with others and spread the germs of disease among them; upon demobilization, these infected men have gone back to their homes or have wandered about in various countries, carrying with them the germs of infection. Among the diseases to be watched is typhus; the last week of August and the month of September showed about seventy-five cases in Germany, three in Vienna, and a few scattered cases in and about Genoa. At the same time there was an outbreak of smallpox in Germany, with about one hundred and sixty cases, and in addition, there were seven cases in Vienna and five in Hungary. The dangers of amoebic dysentery seem to be particularly great, as in Prus-



sia during the month of September there were about five thousand cases with one death in ten, and in Vienna there were approximately seven hundred cases with one death in three.

In order to protect themselves from the spread of the disease, a number of countries have taken the precaution to declare quarantine against certain ports. Denmark has declared quarantine against Finnish ports on the Baltic, Egypt against arrivals from Salonica, Constantinople and Smyrna, and France against a number of countries. A great part of the quarantine is on account of the plague, which is reported to have spread widely in the first half of the year 1919 through Egypt, Arabia, some provinces of China, the British possessions in India, the Dutch East Indies, Turkey, and in some of the islands of the Pacific. It is feared also that cholera may penetrate into Europe. Up to the middle of September, about one hundred and thirty thousand deaths from this disease occurred in British India, five thousand deaths out of sixty-five cases in Java, and forty-seven deaths out of sixty-seven cases in the Philippines. These figures indicate clearly the danger of spread of infectious diseases and give evidence that the care and quarantines of the Western nations are not without reason.

#### BOSTON AND MASSACHUSETTS.

**WEEK'S DEATH RATE IN BOSTON.**—During the week ending Jan. 10, 1920, the number of deaths reported was 255 against 478 last year, with a rate of 16.45 against 31.30 last year. There were 45 deaths under one year of age against 55 last year.

The number of cases of principal reportable diseases were: Diphtheria, 48; scarlet fever, 65; measles, 254; whooping cough, 59; typhoid fever, 3; tuberculosis, 47.

Included in the above were the following cases of non-residents: Diphtheria, 11; scarlet fever, 17; measles, 2; whooping cough, 1; typhoid fever 1; tuberculosis, 4.

Total deaths from these diseases were: Diphtheria, 6; scarlet fever, 2; measles, 1; whooping cough, 6; tuberculosis, 16.

Included in the above were the following non-residents: Diphtheria, 5; scarlet fever, 1. Influenza cases, 27; influenza deaths, 1.

**LAWRENCE HOSPITAL.**—Dr. Thomas H. Joyce, at present resident physician at the hospital,

has been appointed superintendent of the Lawrence Hospital. Dr. Joseph A. Bacon will succeed Dr. Joyce as resident physician.

The Lawrence Hospital has received recently the sum of five thousand dollars, by the will of the late Miss Kate T. Kimball.

**GIFT TO THE BOSTON FLOATING HOSPITAL.**—A bequest of three thousand dollars to the Boston Floating Hospital was included in the will of the late Henry K. Mansfield of Salem.

**PUBLIC BEQUESTS.**—The will of the late Nellie A. Dexter of Norwood includes bequests of five thousand dollars to the following societies and institutions: Boston Home for Incurables, Boston Nursery for Blind Babies, Industrial School for Crippled Children, New England Peabody Home for Crippled Children, the Free Hospital for Women, Brookline, and the Convalescent Home for Children, Wellesley.

**GIFTS TO HOSPITALS.**—By the will of the late Caroline S. Freeman of Weston, the Boston Lying-In Hospital will receive \$25,000; the Children's Hospital \$10,000; the Convalescent Home of the Children's Hospital, \$10,000; the Baldwinville Cottage Hospital for Children, \$5,000. Upon the death of relatives, one-fourth of a trust fund of \$175,000 will be given to the Harvard Medical School.

**TRIBUTE TO DR. HUGH CABOT.**—The trustees of the New England Baptist Hospital recently gave a banquet at the Hotel Vendome in honor of Dr. Hugh Cabot, who has been at the head of the surgical staff of the Baptist Hospital for twenty years. Dr. Cabot has accepted an appointment as chief professor of surgery in the University of Michigan. Tribute was paid to the estimable service rendered by Dr. Cabot in this country and in France by Colonel Edward H. Haskell, Dr. S. C. Badger, and Dr. Young.

**THE NEW ENGLAND BAPTIST HOSPITAL.**—The sum of five hundred thousand dollars is to be invested in a new building for the New England Baptist Hospital in Roxbury. It has been proposed that construction of this building be begun in the spring, and that the bungalow type of hospital be approximated as nearly as possible.

**SPRINGFIELD ACADEMY OF MEDICINE.**—A meeting of the Springfield Academy of Medicine was



held in Springfield on Tuesday, January 13, 1920. An address, "Industrial Medicine," was delivered by Dr. W. Irving Clark, Jr., of Worcester.

At the February meeting the address will be given by Dr. Daniel F. Jones of Boston.

**DECREASE IN QUINCY MORTALITY RATE.**—The statistics for the year 1919 show a considerable decrease in the mortality rate in Quincy during the past year. The deaths in 1919 totaled 446, against 847 in 1918, a decrease of 401. The high rate in 1918 was due in part to the influenza epidemic. In 1919, in spite of the fact that there were deaths from influenza in the first three months, the death rate for those months was lower than for the first three months of 1917, when conditions were normal. During 1919 there were 32 deaths from accidents, three from suicide, only one from typhoid fever, four from diphtheria, thirty-six from tuberculosis, and seventy-one from heart disease.

**INFLUENZA IN BOSTON.**—During the week ending January 10, there were reported to the Health Department of Boston twenty-seven cases of influenza and one death from that disease. In the corresponding week last year there were reported 1626 cases and 190 deaths. There were twenty-seven deaths from pneumonia this year, as compared with thirty-seven in the corresponding week of last year.

**ELECTION OF DR. MARY E. MOSHER.**—Dr. Mary E. Mosher of Roxbury has been elected president of the Massachusetts Surgical and Gynecological Society, a large organization which has members coming from all parts of the state, among them some of the leading surgeons of Massachusetts. Dr. Mosher has been a member of the Society for twenty-eight years, and was one of the first women to be admitted to the Society.

#### NEW ENGLAND NOTES.

**AUGUSTA GENERAL HOSPITAL.**—It is expected that the work on the construction of the new wing of the Augusta General Hospital in Maine will be completed and ready for occupancy in March, 1920. In 1917, the sum of \$25,000 was raised in order to enlarge the facilities of the hospital, but because of the war, it was necessary to postpone the construction of the new

building. The new wing which is now under construction will have three stories and a basement, and will be built of steel and tile, with no wood work except in the window fixtures and the half-way panellings. It is situated slightly toward the rear of the main building and is ninety-six feet long and forty feet wide. In the basement will be the dining-rooms, a storeroom, a refrigerator plant, and the main kitchen. On the first floor will be the office of the superintendent of nurses and several small wards. On the second floor there will be a number of private rooms, nine on the west side and four on the east. All the surgical work will be done on the third floor, where there will be three operating rooms, two for general cases and one for special cases, and x-ray room, and a sun porch. The new building will be provided with all modern hospital equipment.

**WAR RELIEF FUNDS.**—The New England Branch of the French Orphanage Fund has acknowledged contributions to the total amount of \$545,796.58. The sum of \$285,667.79 has been contributed to the New England Branch of the French Wounded Fund for the American Hospital at Rheims.

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### The Massachusetts Medical Society.

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MEETING OF JOINT COMMITTEE ON LEGISLATION OF THE MASSACHUSETTS MEDICAL SOCIETY AND THE MASSACHUSETTS HOMOEOPATHIC MEDICAL SOCIETY, DECEMBER 30, 1919.

A meeting of the joint committee on legislation of the Massachusetts Medical Society and of the Massachusetts Homeopathic Medical Society was held at the Boston Medical Library, on December 30, 1919, at 12 o'clock. The auxiliary members of the committee, representing both societies, were invited to be present. About forty members from all parts of the State attended. Dr. Alfred Worcester, chairman of the committee, presided and outlined to the committee the work for the coming year. He stated that every effort would be made to keep the members informed of proposed legislation, and of the progress of bills in the Legislature. This would be done by letter, through the Bos-

TON MEDICAL AND SURGICAL JOURNAL, and through the District Medical Societies, and various medical clubs.

The first specific matter which was considered was the vaccination laws. It was unanimously voted to support legislation making vaccination compulsory in private as well as in public schools, and it was further unanimously voted that a certificate from a physician, stating that vaccination would be dangerous to any individual, should be good for a period of one year only. The members of the Auxiliary Committee were urged to bring the facts in regard to vaccinations before the individual legislators. Dr. Worcester mentioned the experience of Dr. Heiser in the Philippines, where he reported over ten million vaccinations without any disastrous results, in a region where there had previously been forty thousand deaths from smallpox annually.

The next matter considered was that of maternity benefits. The provisions of House Bill No. 1902, printed as a House document in July, 1919, commonly known as the Young Bill, were explained. In this bill it is proposed that the State Department of Health provide medical and nursing care, which of course implies care which the Board of Health endorses as proper. The bill, however, provides for a free choice of physicians on the part of the patient. Considerable discussion followed in regard to the provisions of this bill. Dr. W. P. Bowers pointed out that at the present time, in many obstetrical cases, no physician was in attendance, and that there were about 500 midwives practicing in the state. No definite action was taken in reference to the matter of maternity benefits, as the final terms of any bill to be presented were not yet determined.

Matters of child health legislation were next considered. The Massachusetts Civic League favors measures to provide school nurses and school physicians everywhere, with a director of physical education. It was voted to favor such legislation.

Dr. Bowers presented the bill which would be introduced by the joint committee on education of the state societies, which would provide for a minimum education preparatory to the study of medicine. Such a bill would prevent the examination, by the State Board of Registration in Medicine of improperly educated candidates. The bill proposed is supported by the osteopaths,

also. Dr. Bowers pointed out that such a bill, in order to succeed, must be supported by others than physicians. It was voted to support the proposed legislation.

Dr. Worcester stated that measures were under consideration, directed against unjust malpractice suits. No definite bill has, as yet, been presented, but approval of any proper bill, making unjust suits difficult to prosecute, was voted.

In regard to the drinking of Jamaica ginger, it was considered that no action was necessary, as constitutional prohibition would, when effective, take care of this matter.

Dr. F. W. Anthony brought up a matter of industrial insurance, and stated that a case was before the courts to decide the definition of the term "unusual case." As it appeared that the matter was one of interest to the whole medical profession, it was suggested that counsel be employed to represent the medical profession, as a party in interest, in this test case. The matter was left to the committee on industrial insurance.

Dr. Bowers brought up the proposition for the temporary registration of house officers in hospitals. Approval of the plan was voted. Dr. Bowers also brought up the matter of medical students assisting in the care of obstetrical cases, and stated that the present law forbade the association of registered physicians with those not registered. He asked that steps be taken to bring absolutely within the law the proper instruction of medical students.

JAMES S. STONE,  
*Secretary.*

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### Miscellany.

#### EMMA B. CULBERTSON, A.M., M.D.

EMMA B. CULBERTSON, M.D., a member of the Staff of the New England Hospital for Women and Children since 1883, died at St. Petersburg, Fla., January 8, 1920.

Dr. Culbertson was well known as one of the prominent Boston surgeons for many years, a member of the American College of Surgeons, the American Medical Association, the Massachusetts Medical Society, National Women's Medical Association, Women's City Club of Boston, and other organizations, interested in all movements for the advancement of women.

*Be It Resolved*, That we, her colleagues at the New England Hospital for Women and Children, deplore her loss.

We shall miss the inspiration that her constant enthusiasm and untiring service have been to us in our daily work.

For the Medical Staff of the Hospital,

EMILY F. POPE, *Sec'y.*

### Correspondence.

#### SIZE AND MANAGEMENT OF STATE HOSPITALS.

Talmadge, Calif., Dec. 28, 1919.

*Mr. Editor:*—

I beg the opportunity of replying to an article of September 20 by Dr. May, Medical Superintendent of the Boston State Hospital, covering two points—the proper size of a state hospital, and the economy of management. Having been connected with army hospitals for ten years, having also been connected with one mental hospital of three thousand patients, another of six thousand, and at the present time being in charge of a hospital of twelve hundred patients, I feel that I have some qualifications to write on this subject.

1. The object of a mental hospital is generally considered to be: First, the care of the mental patients; second, the economy of administration. On the other hand, it is not the care of the family of mental patients.

2. It is generally considered that the mental treatment, as apart from the physical treatment, of these cases means removal from the source of mental irritation, mental rest with relief from responsibility, gradual readjustment to an ordinary environment. This means individual study of each case, since the point of view is necessarily personal. In a mental hospital of from four to six thousand beds, it has always necessarily meant a delegating and dividing of authority with subordinates. Even when dealing with more than twenty-four hundred, the organization developed has necessarily become artificial and impersonal. Practically, the patients come in contact with the under-paid assistant physician who sees daily from three to six hundred patients. If an adequate salary for adequate treatment is paid there is no saving in the so-called over-head expense of management. While there is some argument regarding the interests and claims of the patients in hospitals of fifteen hundred and three thousand respectively, there is no argument favoring the patients' interests of between three thousand and six thousand bed hospitals. In the latter case too few patients' interests are considered. You really have a group of hospitals—not one hospital—wherein, of course, there is no economy.

3. A study of hospitals in various places in the United States will show that the cost of maintenance (the service and care being the same) will vary directly with what the hospital can produce. Therefore it seems evident that only the smaller mental hospitals have a place in a large metropolitan centre such as Boston. When you speak of an outlying farm you mean a group of patients removed from the best means of treatment and presumably considered chronic, hopeless insane. Certainly occupational therapy is teaching us something else. One does not speak now of chronic, hopeless insane.

4. The history of desirable sizes for mental hospitals is interesting in this connection. In California, of the six hospitals, three contain twenty-four hundred beds only, and there is no intention of increasing the

size, while three contain from twelve to sixteen hundred only. In Cincinnati, Ohio, Long View Hospital was originally a county or a city hospital. It has been found advisable to make it a state hospital to relieve the county of the excessive burden of maintenance. In New York it has always been the understanding that the enormous hospitals near New York or in New York were a regrettable necessity. At any rate, they have always acted rather as clearing hospitals, and patients were constantly being transferred to up-state hospitals.

5. The fact that reatives of patients in Massachusetts would be obliged to travel twenty-five or thirty miles to see patients does not seem very important, especially as it is obvious from the standpoint of mental treatment that one often wishes to remove patients from irritating family environment until the social worker can secure some readjustment. Surely a patient has an origin in environment and treatment is complete only if the environment is first removed and then rebuilt as far as possible.

Very truly yours,

ROBERT LEWIS RICHARDS, *Medical Supt.,*  
Mendocino State Hospital.

#### POISONOUS GASES IN WARFARE.

Boston, January 8, 1920.

*Mr. Editor:*—

The report of the Surgeon-General, U.S.A., contains a paragraph which has received considerable attention in the press and now appears in the BOSTON MEDICAL AND SURGICAL JOURNAL without comment. This paragraph states that "poison gas is one of the most humane weapons of war." Lest it appear that the profession of medicine endorses this statement will you kindly give space to this communication?

The Surgeon-General bases his statement, presumably, on statistics of the U. S. Army covering only the last 200 days of the war. In this connection it should be clearly pointed out, first, that our army went into the fighting best equipped with the protection of gas-masks and training against this means of warfare. It is also known that the supplies of poisonous gases of the Huns at this time (1918) were low, so that the use of such by them had greatly lessened. Instead of asphyxiating gases, such as chlorine, phosgene, and prussic acid, the mild type of poison gases, such as "mustard" and "tear" gases and smoke were more used. Their object was to reduce the efficiency of our troops. It is not clear that these produced any casualties, but it is true that large numbers of "mustard gas" burns—the delayed action of this gas, which was never fatal—caused in this period of the war very many casualties in which the mortality was nil.

On the other hand, let us refer to the casualties from poisonous gases early in the war. Chlorine was first used by the Hun in April, 1915, against the Canadians at Ypres. The surprise of this attack, used contrary to the Hague Convention, as signed by Germany, caused 5,000 deaths, according to official German reports. Hun officials also claim that their use of poisonous gases between April, 1915, and August, 1916, caused the death of about 35,000 men, largely British.

Had the Surgeon-General seen, as the writer has, the effects of poisonous gases on soldiers in 1915—the agony and lingering deaths of the men who met those first attacks—he must have hesitated to use the word "humane." Their suffering and deaths, as they gasped for breath, blue in the face, coughing and struggling for air, can never be forgotten.

If the limited period of six months of our contact with the enemy is to bring statistics to the up-to-date conditions (because the conduct of war has changed almost instantly during the past five years) how will his conclusion be altered when the deadly carbon

monoxide is used, against which there is no known protection?

Some believe the end of war may come through what Marshal Foch calls "theories or leagues of improbable stability;" some that further inventions of unbridled fiendishness will make war impossible. Both underrate the human element in the extremes, on the one and, of perfidy, and, on the other, of valor which nothing can defeat. If there is no reasonable ground for hope that the use of poisonous gases will bring about the end of war, is it not for the profession of medicine to repudiate the idea that asphyxiating poisonous gases can be called "humane" or decent weapons of war?

It is to be hoped that while our Chemical Warfare Service must keep in the advance of the field in the art and knowledge of gas attack and defense, yet our army may never again be forced by an unscrupulous foe to use poisonous asphyxiating gases.

CHARLES S. BUTLER, M.D.

#### "PALMAM QUI MERUIT FERAT."

Boston, Mass., Jan. 15, 1920.

Mr. Editor:—

In your last issue of the JOURNAL the writer of the notice of a talk by me before the Massachusetts Therapeutic Massage Association to occur on January 20, makes me masquerade under the title of "Professor Emeritus of Clinical Medicine at Harvard Medical School." I never had that title and it does great injustice to Dr. Frederick C. Shattuck who for several years has most worthily held it and, please God, will continue to do so for many years to come.

If you will kindly insert this in your next issue you will greatly oblige. Yours truly,

ELBRIDGE G. CUTLER, M.D.

#### SOCIETY NOTICES

**THE AMERICAN DIETETIC ASSOCIATION.**—The next annual meeting of the American Dietetic Association will be held in New York City, October 22, 23, 25, and 26, 1920. Plans under consideration now promise to make this one of the most worth while meetings of interest to all groups of people whose special work is allied with nutrition and dietetics.

The officers of the organization are: President, Lulu Graves, Professor of Home Economics, Cornell University, Ithaca, N. Y.; Editor of the Department of Dietetics, *The Modern Hospital*; First Vice-President, Ruth Wheeler, Goucher College, Baltimore, Md.; Second Vice-President, Marguerite Deaver, Mt. Sinai Hospital, Cleveland, Ohio; Secretary, E. M. Geraghty, New Haven Hospital, New Haven, Conn.; Treasurer, Margaret Sawyer, Bureau of Dietitian Service, American Red Cross, Washington, D. C.

**SUFFOLK DISTRICT MEDICAL SOCIETY, SURGICAL SECTION.**—The next meeting of the Surgical Section, Suffolk District Medical Society, will be held on February 18, 1920, at 8.15 P.M., at the Boston Medical Library. Dr. John A. Hartwell, Clinical Professor of Surgery, Cornell University Medical College, and Director of Surgery, Bellevue Hospital, will present a paper. Subject, "Abscess of the Lung." A discussion will follow the reading of the paper. It is hoped that all those present will participate.

RICHARD H. MILLER, Secretary.

**MASSACHUSETTS SOCIETY OF EXAMINING PHYSICIANS.**—The dinner and meeting of the Massachusetts Society of Examining Physicians will be held at the Copley-Plaza on Tuesday evening, February 10. Dinner at 7, meeting at 8 o'clock.

The speaker will be Dr. Alice Hamilton, Assistant Professor of Industrial Hygiene at Harvard Medical School, whose topic is "Dangerous Trades." Discussion by Dr. W. F. Boos and Dr. Timothy Leary will follow. WILLIAM PEARCE COUES, M.D., Secretary.

#### NOTICE.

#### GOVERNMENT POSITIONS IN OCCUPATIONAL THERAPY.

The United States Civil Service Commission has announced examinations for field supervisor of reconstruction aides in occupational therapy, at \$1,800 a year; superintendent of aides in occupational therapy, at \$2,400 a year; special instructor in occupational therapy, at salaries ranging from \$1,200 to \$3,500 a year, and reconstruction aide, at salaries from \$720 to \$960 a year. Reconstruction aides will also receive quarters, subsistence, and laundry. Appointees to all positions whose compensation does not exceed \$2,500 a year will receive the increase of \$20 a month granted by Congress if their services prove satisfactory. In all, about 500 positions in the Public Health Service throughout the United States, and at St. Elizabeths Hospital (insane), Washington, D. C., will be filled.

The examinations for field supervisor of reconstruction aides and superintendent of aides will be held on February 24. The other examinations will be open until further notice. Both men and women, if qualified, will be admitted, but appointing officers have the legal right to specify the sex desired when requesting certification of eligibles.

None of the examinations require competitors to assemble in an examination room for tests. The ratings will be based upon the elements of education, training, and experience, and upon a written discussion on one of a number of given topics connected with the work.

Further information and application blanks may be obtained from the representative of the Civil Service Commission at the post office or customhouse in any important city, or by communicating with the United States Civil Service Commission, Washington, D. C.

#### RECENT DEATHS.

DR. NEIDHARD HAHNEMANN HOUGHTON, of Brookline, was struck by an electric car on Beacon street in that town, December 26, 1919, and died shortly after at the Massachusetts Homeopathic Hospital.

Dr. Houghton was born in Barnet, Vt., Aug. 10, 1861, and was the son of Milo G. Houghton and Rosetta M. Sergeant Houghton. In 1887 he was graduated from the New York Homeopathic Medical College and Hospital and in that same year commenced practicing his profession in Boston. He was associate professor of diseases of the throat and nose in the Boston University School of Medicine.

Dr. Houghton held membership in the American Institute of Homeopathy, the Massachusetts Medical Society, the Massachusetts Homeopathic Medical Society, and the Boston Art Club.

His wife, who was Miss Mary L. Hazen of St. Johnsbury, Vt., and whom he married in 1892, survives him, together with three daughters.

DR. EMMA VALERIA PINTARD BICKNELL CULBERTSON died while on a trip to Florida, at St. Petersburg, in that state, January 8, 1920, at the age of 65.

She was a graduate of Vassar College and the Women's Medical College of Pennsylvania in 1881, and had been a member of the staff of the New England Hospital for Women and Children, in Boston, since 1883, and surgeon on the staff since 1892. At the time of her death she was senior surgeon.

She was a member of the American College of Surgeons, the American Medical Association, Massachusetts Medical Society, and many other organizations. She was passing the winter in Florida with her friend of many years' standing, Dr. Mary A. Smith, with whom she lived at 33 Newbury Street, Boston.

She was born in New Albany, Ind., the daughter of John P. and M. C. Culbertson, both deceased. She is survived by a niece and a nephew.